THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XXI. No. 502—24TH YEAR.] LONDON, JANUARY 2, 1872. [Subscription per Annum. { 15s. in Advance. 18s. Credit.] DOUBLE No. Price 1s.

RAMSAY'S NEWCASTLE CANNEL COAL. Analysis—10,000 cubic feet of gas per ton of coal; 26-candle gas; 13¼ cwt. coke per ton of coal.
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DO. GARESFIELD COKE.
RAMSAY'S FIRE-CLAY ARTICLES.
GAS-RETORTS, introduced 1828. FIRE-BRICK WORKS, established 1804. FIRE-CLAY SANITARY PIPES. CHIMNEY-TOPS, and all Goods made of Fire-Clay. The Fire-Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article. The FIRE-BRICKS (marked "RAMSAY") are to be seen in all parts of the world, and the Works are the most extensive in the Kingdom.
Manufactories—Derwenthaugh, Swalwell, and Hebburn Quay, near Newcastle-on-Tyne; and London Wharves—Falcon Wharf, No. 80, Bankside; and Honduras Wharf, Cubit Town. Large stocks kept.
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Patentees of the Standard Gasometers for the Government, and of the
IMPROVED DRY GAS-METERS.

These Meters are warranted to measure correctly and not to vary. Their acknowledged superiority has brought them into general use more rapidly than any Meters hitherto manufactured.
To meet the increasing demand, G. GLOVER AND CO. have just entered on possession of extensive premises adjoining their present Works in Ranelagh Road, and they are now prepared to execute promptly, orders to any extent. They keep in stock all sizes of Meters up to 200 lights. In cases of haste, on the receipt of a telegram early on one day, their Meters can be delivered next day in any part of England, and in the large towns in Scotland.
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JOSEPH COWEN and CO.,
BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,
Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS-RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS-RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."
J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.
COWEN'S GARESFIELD COALS.
Coal Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.

JOHN RUSSELL AND CO.,
THE OLD TUBE-WORKS, WEDNESBURY;
AND
THE ALMA WORKS, WALSALL.
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WET AND DRY GAS-METER
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STREET-LAMP
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ESTABLISHED 1830.
All materials found for the alteration of Public Lamps for lighting with the Rod. Regulators with Lava Burners.

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NEAR NEWCASTLE-ON-TYNE.
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LONDON, 1862.
HAVE OBTAINED THE
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FOR
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PARIS, 1867.
IMPROVED DRY GAS-METERS AND GASOMETERS,
AT THE
PARIS EXHIBITION.
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FOR GAS, STEAM, & WATER, EITHER BLACK, GALVANIZED, OR ENAMELLED.
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For Gas, Steam, Water, &c.
SOLE LICENSEES AND MANUFACTURERS for the United Kingdom of
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LAP-WELDED IRON & HOMOGENEOUS METAL TUBES
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Boiler-Tube Ferrules, Gun-Metal Gland Cocks, Water-Gauges, Whistles, &c.; Stocks, Taps, and Dies for Screwing, and Gas-Fitters Tools of all kinds.
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RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,
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The Works are of such magnitude as to ensure the prompt execution of orders to any extent.
Estimates for Setting, or Bricklayers sent when required.
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The only Prize Medal awarded for TUBES & FITTINGS.

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IMPROVED WROUGHT-IRON RETORT-LIDS, CROSS-BARS, & SCREWS;

AND GAS APPARATUS OF EVERY DESCRIPTION.

SOLE MANUFACTURERS OF LIVESEY'S PATENT GASHOLDER MAN-LID,

By use of which Man-lid, inlet and outlet pipes can be examined and cleansed without loss of gas in crown of holder, or ingress of atmospheric air.

ROOFS, GIRDERS, BRIDGES, AND BOILERS OF ALL KINDS.

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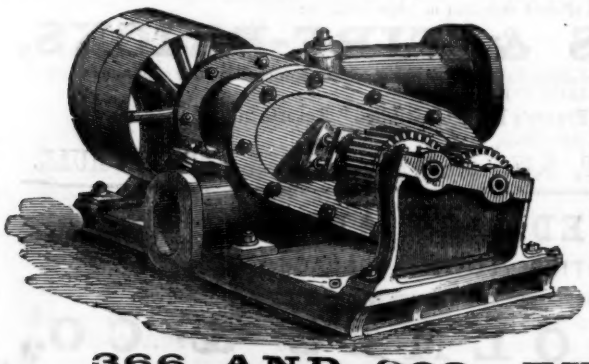

The very best Pump yet introduced for pumping in gas-works, tanneries, distilleries, breweries, water and sewage works, paper-mills, sugar-houses, starch and chemical works, for draining quarries and irrigating land, filling tanks at railway stations, factories, towns, mansions, ships, and dockyards.

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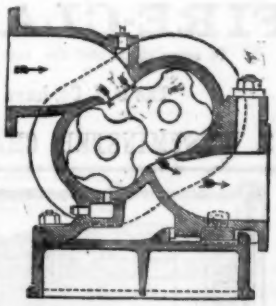
For testimonials and particulars, apply at

Diameter of Pipes, Suction and Delivery.	Gallons raised per Hour.
Inches.	
2	2,000
2½	3,000
3	4,500
4	7,500
5	12,500
6	18,000
7	24,000
8	31,000
9	40,000
10	49,000
11	59,000
12	71,000
14	96,000
15	110,000
16	125,000
18	160,000



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KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Burs, Flues, and Quarries, are all Manufactured of the same quality of Clay

Every Retort and Brick is branded "King Brothers, Stourbridge."

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IMPROVED
WOOD SIEVES FOR GAS PURIFIERS.
WORKS:
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The above Sieves are used by the principal Gas Companies in London and the country. Their utility, durability, and cheapness combined, render them superior to all others.
Testimonials from Gas Engineers who have tested their qualities forwarded on application.
All orders punctually attended to, and estimates given if required.

INTERNATIONAL EXHIBITION, 1862.
CLASS X.
PRIZE MEDAL
For excellence of Fire-Clay Gas Retorts, and
"HONOURABLE MENTION" for
good quality of Fire-Bricks.
WILLIAM STEPHENSON & SONS,
THROCKLEY,
NEWCASTLE-ON-TYNE.

THOMAS EDINGTON & SONS,
PHŒNIX IRON-WORKS,
GLASGOW,
MANUFACTURERS OF
GAS AND WATER PIPES,
All sizes up to 4 ft. diameter;
RAILWAY CHAIRS AND SLEEPERS,
and general Castings. Also
GREGORY'S & COCKBURN-MUIR'S
PERMANENT WAY.
London Office: 63, OLD BROAD STREET, E.C.

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ARDWICK IRON-WORKS,
FAIRFIELD STREET, MANCHESTER,
MANUFACTURERS OF
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GAS APPARATUS,
PIPES, VALVES, IRON ROOFS,
WROUGHT AND CAST IRON GIRDERS.
DESIGNS, SPECIFICATIONS, & ESTIMATE
FURNISHED.

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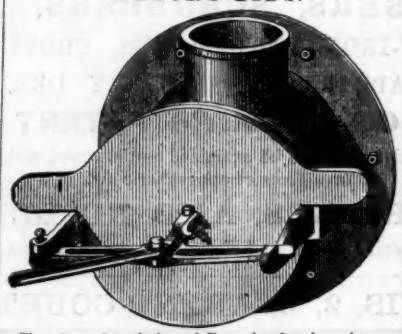
WET & DRY GAS-METER MANUFACTURERS.
STATION-METERS ANY SIZE,
PHOTOMETERS, EXPERIMENTAL METERS, &c.
GAS-METER WORKS, CROSS CAUSEWAY.
EDINBURGH.

BOX'S PATENT FASTENING
FOR
RETORT-LIDS.



The above description of Fastening has been in successful use for a considerable time, and can be supplied at a much more economical rate than the ordinary cross-bar and screw.
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CLOTH GAS-BAGS for MAINS, as supplied to the Imperial, Chartered, and other London and Provincial Gas Companies. Bellows and Valves for inflating Well Dresses, Stokers Gloves, India-Rubber Suction and Delivery Hose, Gas-Tubing, Leather, India-Rubber and Gutta-Percha Machine-Bands, Sheet and Washers for Steam Joints.
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GAS ENGINEERS,
MANUFACTURERS AND CONTRACTORS FOR GAS-WORKS
Of any extent at Home and Abroad,
GOWTS BRIDGE WORKS, LINCOLN,
AND
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CATHELS & TERRACE'S Patent Four-WAY DISC GAS-VALVE is the simplest and best Valve for Purifiers, and as a By-pass for other apparatus in Gas-Works. It is always gas-tight, and has no springs, ground faces, or other delicate parts. By its use the flow of the gas cannot be accidentally stopped, and it never sticks.
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CAST-IRON Retorts, Socket-Pipes, with Syphons, and all requisite Connexions, Lamp Columns, Wrought-Iron Tubing, Valves, Street-Lamps, Sight Holes, Furnace Doors, Ash-Pans, Charging and Coke Shovels, Iron Pails, Coke Barrows, Cross Bars, Fire Pots, Pumps, and Iron Borings.
PURIFIERS, CONDENSERS, & SCRUBBERS erected complete, or the materials supplied; and every description of goods in use by Gas-Works, in stock, at wholesale prices, at
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BELGIAN CLAY RETORTS.
J. SUGG and CO., late ALBERT KELLER, GHENT.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.
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THE FARNLEY IRON COMPANY, LIMITED,
FARNLEY, near LEEDS,
Possess special advantages for the prompt and efficient execution of large orders for
FIRE-CLAY RETORTS & FIRE-BRICKS,
Of every shape and size, and of the best quality; also for their *other productions* in Fire-Clay and Terra-Cotta, including their well-known White and Coloured GLAZED BRICKS.
The F. I. Co. have the exclusive right to make and sell Fraser's Patent "Ribbed" Retorts in Fire-Clay.
Apply as above, or at their Offices,
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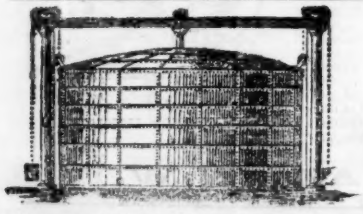

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FOR CITIES, TOWNS, VILLAGES, &c.,
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WHITESTONE IRON-WORKS, HUDDERSFIELD.
SOLE MANUFACTURERS of B. W. THURSTON'S IMPROVED SCRUBBER, CONDENSER, and WASHER, in use in many of the principal Gas-Works on the Continent.
PATENTEES of the IMPROVED COMBINED PURIFYING APPARATUS, so eminently adapted for Exportation.
ESTIMATES, PLANS, and SPECIFICATIONS PREPARED for BUILDINGS and APPARATUS.
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*** *Please address letters to Huddersfield.*
REFERENCES TO NEARLY 300 GAS-WORKS.

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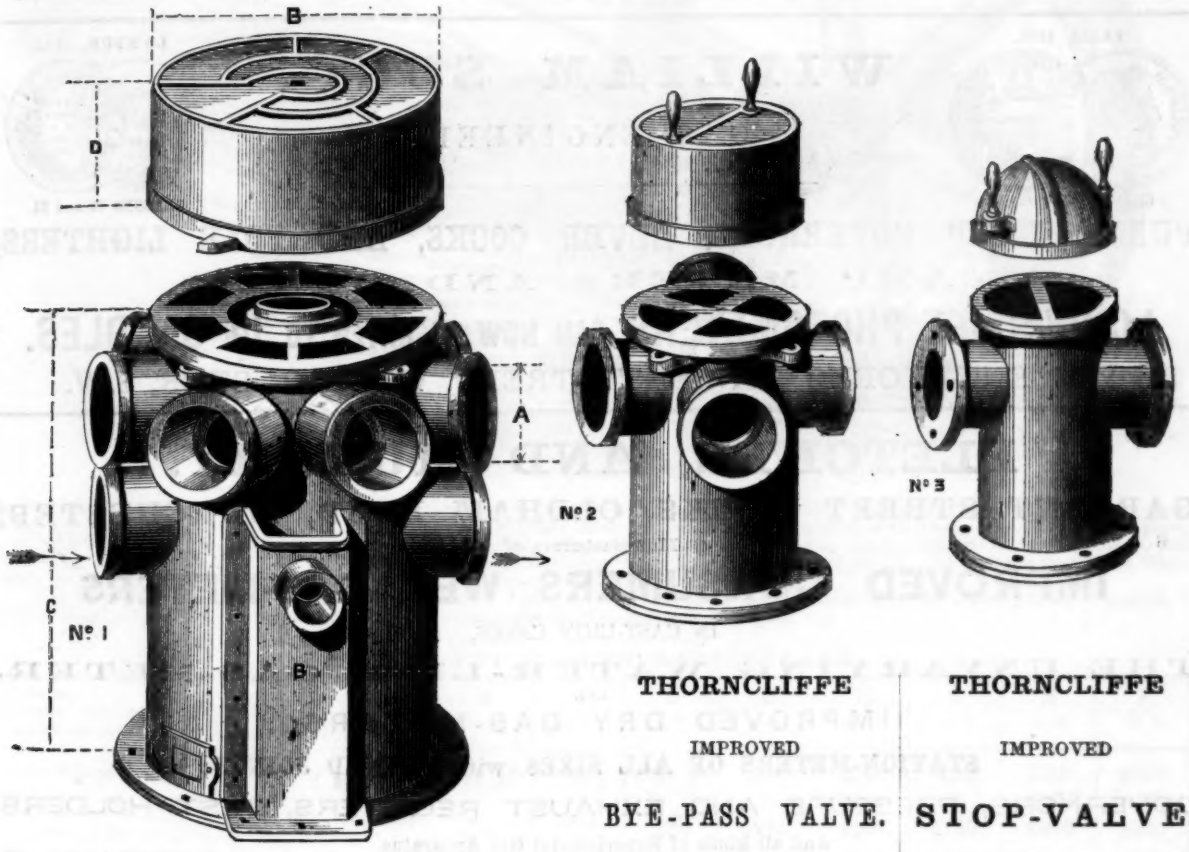
WOOD SIEVES FOR PURIFIERS
Have now been in use for more than ten years, and their advantages and durability fully established. They are made entirely by steam machinery in very large quantities at the most moderate cost.
Midland Iron-Works, Donnington, near Newport, Shropshire; 8, Finsbury Circus, London.

THE THORNCLIFFE IMPROVED CENTRE-VALVE,

MANUFACTURED BY

MESSRS. NEWTON, CHAMBERS, & CO.,

THORNCLIFFE IRON-WORKS, NEAR SHEFFIELD.



THORNCLIFFE IMPROVED BYE-PASS VALVE.

SIZES

From 3 ins. upwards.

THORNCLIFFE IMPROVED STOP-VALVE.

SIZES

From 3 ins. upwards.

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THORNCLIFFE IMPROVED CENTRE-VALVE.

		Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
A	Bore of Pipe...	4	5	6	7	8	9	10	12
B	Diam. of Body.	16	20	23	26	28	31	34	40
C	Height of Tank.	33	35	38	43	46	48	51	56
D	Depth of Cover.	8	9	10	11	12	13	14	16
	Total height...	41	44	48	54	58	61	65	72

In all cases the Covers are cast heavy enough to resist any required pressure.

The advantages derived from the adoption of these Valves are so manifest and cardinal that in the immediate character of the change—the simplicity of the machine—the facility affording for cleaning out connexions between Valve and Purifier—the perfect collection and delivery by suitable overflow of the ammonia, at a greatly diminished depth from ground-line over the old form of Valve—the advantage of connecting on the same level, and at any angle, or opposite to each other, the inlet and outlet pipes without dip or rise—the clear acquisition of space in the purifying-house, by being able to place the boxes nearer together, the new Valve being entirely under the floor—and lastly, though of the greatest importance, the passage of crude and unpurified gas during the change is minimized to the merest fraction, thus preventing the fouling by impure gas the delicate machinery and easily affected exposed movements of the station-meter, thereby preventing the introduction of the enemy (unpurified gas) into the gasholder. Also a dead abutment is offered to all back pressure, imparting thereby to the gauges, governors, and hydraulic seals, a steadiness of action never realized with the once famous, but now fast becoming obsolete, Hydraulic Centre-Valve.

N., C., and Co. also Manufacture and Erect

PURIFIERS, CONDENSERS, SCRUBBERS, GASHOLDERS, ROOFS,

And every description of Gas Machinery.

TENDERS GIVEN FOR WORK FIXED COMPLETE IN ANY PART OF THE KINGDOM.

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STOURBRIDGE,

MANUFACTURERS of FIRE-BRICKS, LUMPS, & TILES,

AND EVERY DESCRIPTION OF FIRE-CLAY GOODS.

N.B.—A Stock of 15 and 16 in. CIRCULAR RETORTS always on hand. Other kinds made to order on short Notice.

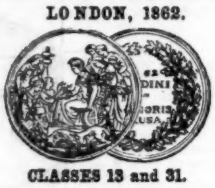
PARIS, 1867.

CLASSES 24 and 53.

WILLIAM SUGG,

GAS ENGINEER.

LONDON, 1862.



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Manufacturers of

IMPROVED CONSUMERS WET GAS-METERS

IN CAST-IRON CASES,

THE UNVARYING WATER-LINE GAS-METER,

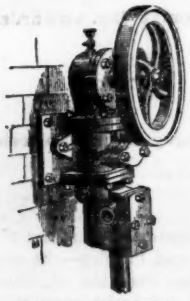
AND

IMPROVED DRY GAS-METERS;

STATION-METERS OF ALL SIZES, with PLANED JOINTS;

GOVERNORS, PRESSURE AND EXHAUST REGISTERS, TEST HOLDERS,

And all kinds of Experimental Gas Apparatus.



Attached to Wall-Plate.

KITTOE & BROTHERHOOD'S

PATENT

"PARAGON" STEAM-PUMP.

Sizes Nos. 1 to 10 deliver from 75 to 21,000 gallons per hour; the height in feet being equal to twice the steam pressure in lbs. per square inch. Prices from £10 to £90

GAS COMPANY'S OFFICE, LUTON, BEDFORDSHIRE,
Feb. 23, 1870.

Gentlemen,—The Paragon Pump which I purchased of you in 1868 has been in constant use from the date of its purchase to this time, for the supplementary supply of two 8 h.p. steam-boilers. It is in request day and night, and has performed the duties required of it without needing any repairs.

Yours respectfully,

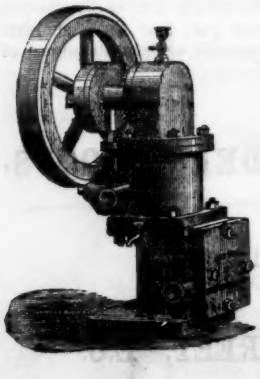
Messrs. Kittoe and Brotherhood. W. PHILLIPS.

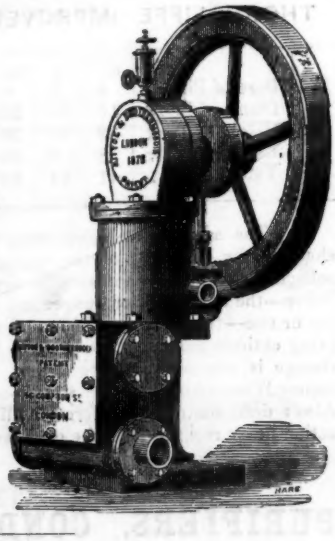
MANAGER'S OFFICE, REDHILL GAS-WORKS,
Sept. 3, 1871.

Gentlemen,—The No. 6 Paragon Pump supplied by you has satisfactorily performed the work for which it was ordered—viz., feeding the boiler and pumping up water for the use of the works. In my opinion, it is a very compact arrangement, the working parts are thoroughly enclosed and protected, and the valves are very simply and quickly got at. It is a useful and reliable auxiliary.

Yours truly,

Messrs. Kittoe and Brotherhood. H. T. EVERIST, *Manager*.





FOR FULL PARTICULARS, APPLY TO

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Manufacturers of Gas-Exhausters, Pumping and other Machinery.

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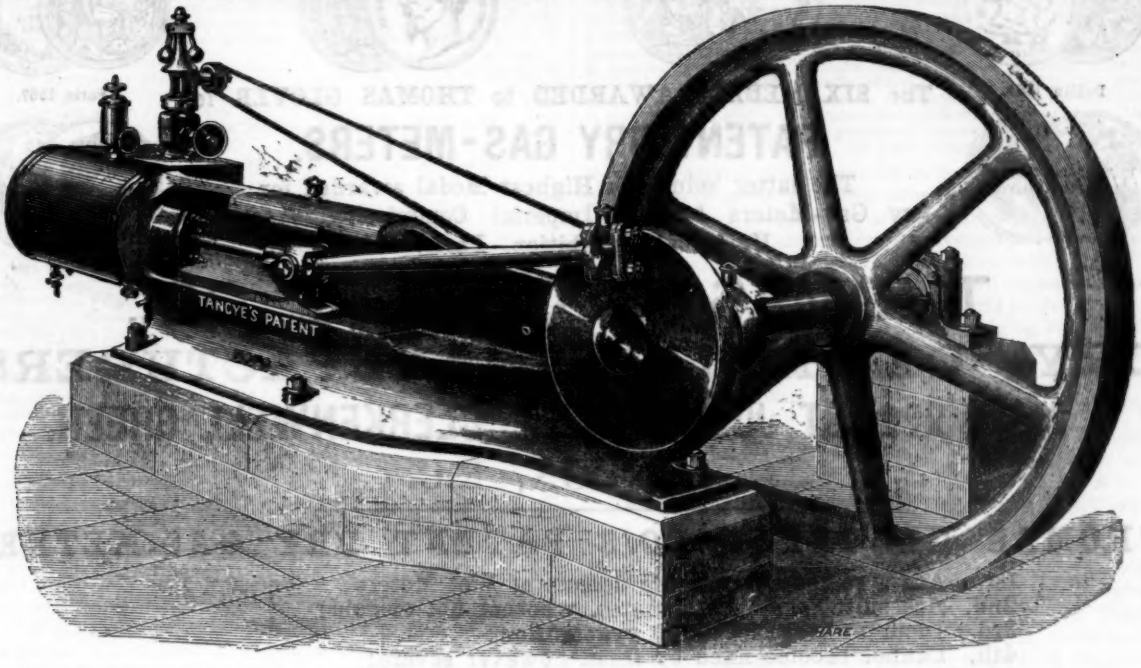
TANGYE'S HIGH-PRESSURE EXPANSIVE STEAM-ENGINES,

WITH TANGYE'S PATENT HIGH-SPEED GOVERNOR.



In this Engine the working parts are considerably reduced in number, as compared with Horizontal Engines generally, rendering it far more durable and compact. The bed-plate, front cylinder cover, cross-head guides, and plummer-block for crank-shaft bearing, are all cast in one piece, the cylinder with its valve-chest being bolted to the end of the bed. The cross-head slippers and connecting-rod ends are made adjustable, so that any wear can be readily taken up. The fly-wheel, cylinder end, connecting-rod, and crank-plate are all bright. All the parts are made to Whitworth's gauges, and the material and workmanship are of the highest class throughout.

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Price of Engine	£27 10	£32	£38 15	£46	£70	£90	£110	£130
Feed Pump, with Gun-Metal Working Parts, EXTRA.	....	£3	£3 15	£4	£5 10	£6	£7 10	£8
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WITH HOLMAN'S PATENT ECCENTRIC FASTENINGS.

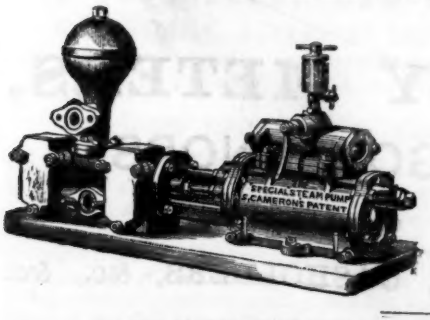
ADOPTED IN THE PRINCIPAL GAS-WORKS.

THE "SPECIAL" STEAM-PUMP

IS THE

BEST PUMP FOR PUMPING AMMONIACAL LIQUOR, TAR, AND WATER IN GAS-WORKS.

AND THEREFORE ADOPTED IN THE FOLLOWING AND OTHER GAS-WORKS:—



Aylesbury Gaslight and Coke Company.
Alliance and Dublin Gas Company.
Bolton Gas-Works.
Burslem and Tunstall Gas Company.
Brighton Gaslight and Coke Company.
Bury St. Edmund's Gas Company.
Burnley Gas Company.
Bradford Gaslight Company.
Corporation Gas-Works, Stockton.
Chartered Gas Company, Westminster.
Cork Gas-Works.
Dewsbury and Batley Gas Company.
Dublin Consumers Gaslight and Coke Company.
Dunstable Gas-Works.
Imperial Gas-Works, St. Pancras.
Ipswich Gas-Works.
Kingston-upon-Hull Gaslight Company
London Gaslight Company, Nine Elms.
Lewes Gas-Works.
Louth Gas Company.
Middlesbro' Gas-Works.
Northampton Gas Company.
Phœnix Gas-Works, London.
Richmond Gas Company.
Rio de Janeiro Gas Company.
Reading Gas-Works.
Shipley Gas-Works, near Bradford.
St. Albans Gas-Works.
Sutton, Southcote, and Drypool Gas Company, Hull.
St. Helen's Gas Company, Lancashire.
Windsor Royal Gaslight Company.
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WATER METERS.

W. P. & Co. beg to state that they are now prepared to supply Station-Meters with planed joints.

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TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.

MARPLE.—*Letters of administration appear to us to be the only means of making a title to the shares.*

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Subscribers who desire to avail themselves of the reduction in the subscription to the JOURNAL by paying in advance, are reminded that this can only be done during the present month.

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THE JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, JANUARY 2, 1872.

Notes upon Passing Events.

ON this very day fifty-four years ago—on the 2nd of January, 1818—half a dozen young engineers met and founded a society for mutual improvement, from which eventually sprang the present wealthy and influential Institution of Civil Engineers. Amongst those young mechanics were the well-known names of Maudsley and of Field and Collinge, now best remembered by his all but universally used patent axles. In 1820, Telford, the great engineer of that day, became President, and from that day until June, 1828, when the Charter of Incorporation was obtained, the number of members had swelled to 185. Telford continued President until his death, in 1834 (when the sceptre of superiority had passed from the hands of the great road-makers to the wielders of locomotive steam power), and the number of members only amounted to 200. It is significant of the state of the engineering profession at the time that in the nature and objects of the art, embodied in the Royal Charter from a more diffuse statement by the celebrated Thomas Tredgold, *railroads are not mentioned*, and the word "steam" is not once used. The following is the preamble of the charter:—

A society for the general advancement of mechanical science, and more particularly for promoting the acquisition of that species of knowledge which constitutes the profession of a civil engineer; being the art of directing the great sources of power in nature for the use and convenience of man, as the means of production and of traffic in states, both for external and internal trade, as applied in the construction of roads, bridges, aqueducts, canals, river navigation, and docks, for internal intercourse and exchange; and in the construction of ports, harbours, moles, breakwaters, and lighthouses, and in the art of navigation by artificial power, for the purposes of commerce; and in the construction and adaptation of machinery, and in the drainage of cities and towns.

It will be observed that the revolution then fast advancing by the substitution of steam for sailing power is only obscurely hinted at as "the art of navigation by artificial power." Telford was a great man in his day, and rendered unquestionable services, by his public works, to his country; but we have reason to rejoice that England never had an official class of civil engineers, amongst whom Telford would have unquestionably held a foremost, if not the first place. By such an official body (judging by experience at home and abroad), the grand railway system then simmering in the brain of that uneducated genius, George Stephenson, would have been seriously discouraged, and temporarily suppressed. A few notable names still survive from amongst Telford's early followers. Baron Charles Dupin, author of the first comprehensive book on the public works of Great Britain, was elected an honorary member in July, 1820, and had survived the wreck of his country in August of last year. The baron, in his thick quarto and lucid French, astonished us as much as foreigners by his description of the great works which British unofficial engineering skill and private enterprise had executed in roads, canals, docks, ports, and midland factories. George Parker Bidder is almost the sole survivor of the notable men who followed Telford. In the library of the Institute will be found a manuscript book by Telford, which is not only an example of the minute attention to details of that eminent man, but of the scarcity of the sort of literature which could be useful to a young engineer in carrying out constructive works. This manuscript contains drawings and description in Telford's own hand of a navvy's wheelbarrow! When Telford died—his death hastened by the fatigues attendant on attempts to work a locomotive, and preserve the importance of his beloved child, the Holyhead road, against the invasion of the upstart railroads—he was succeeded by Mr. James Walker in January, 1836—an engineer almost officially great in docks, harbours, canals, and navigation works, and as an educated and refined gentleman naturally inclined to throw cold water on revolutionary invasions of the rough northern mining school of engineers, "who had taken the ignorant public "by storm with their fallacious calculations." The most important event in the history of the presidency of Mr. Walker was the election of Mr. Charles Manby to the office of secretary. It is universally admitted, as proved by a very substantial testimonial, that to Mr. Manby's extraordinary powers of management, assisted by his varied accomplishments, the solid success and brilliant position of the Institution of Civil Engineers is greatly due. We say this without changing our opinion, repeatedly expressed, that his theory of editing the Transactions so as to iron all the individual wrinkles of character out of every discussion is founded on an essentially false principle. It might have been prudent during the period of the fierce disputes between those Guelphs and Ghibelines, the followers of the uniform gauge of Stephenson and the abandoned broad gauge of Brunel; but at the present day it is rather hard on readers of the Transactions to find the originalities of such men as Mr. Bidder and Mr. Hawksley reduced to the same dull level as the most common-place dicta of the most common-place members of the society. Between 1835 and the year 1845, when Mr. Walker, in deference to the generally expressed opinion of the members of the Institution, retired, and was succeeded by Sir John Rennie—an hereditary engineer—railroad engineering, like Aaron's rod, seemed to have pretty well swallowed up all the other branches of the profession in the eyes of the public.

Sir John Rennie's inauguration address was a book of a hundred pages, in which he traced every branch of British engineering and mechanical art down to the year of his election. It really seemed as if he had left nothing for his successors to say; but after twenty-five years there is scarcely one class of work described by him in which important progress has not been made. As examples, it is only necessary to mention telegraphy, steam navigation, with screw propulsion, and iron ships (which have revolutionized our commercial marine), and the whole art of manufacturing small arms and great guns. Sir John Rennie served three years; after his time the Presidents have been elected for two years only. Amongst his successors have been some of the most eminent men who ever adorned this specially practical

and scientific profession. This evening the presidential chair will be occupied by one who, at the election in 1870, waived his claim in favour of Mr. Vignolles, who, with the exception of Mr. Bidder and Mr. Barlow, is, we believe, the oldest active member of the Institution. Mr. Hawksley, like his most eminent predecessors, has attained his present brilliant position in an eminently scientific branch of his profession by self-education. Such success in one of those countries where all public works are under the control of highly-educated, uniformed, decorated officials would have been impossible.

The Institution of Civil Engineers differs from all the other scientific or semi-scientific societies (with the exception, perhaps, of the Royal Society) which give a right to affix letters to a name, that no qualification except actual work creates a claim for election as member, and no one has ever been elected President except, in the words of the bye-law, "an eminent engineer." One peer only graces the list of associates—the Earl of Lovelace—but he is also a F.R.S. Although several of the nobility are amateur engineers of no mean merit, the Institution agrees to prefer that class of society in their proper places, as legislators, or guests on festive occasions. The list of honorary members scarcely exceeds a dozen, including two members of the Royal Family, and the ex-Emperor of the French, the last honorary distinction accepted by him previous to his fall. Three others are gentlemen eminent in abstract sciences. Amongst the foreigners are Todleben, of Sebastopol reputation, and another Russian general. Other societies, where the principal qualification is a willingness to pay the subscription, probably understand their own business best in making handles to names a preferential claim, if not almost a *sine qud non*, to holding the office of President. The presidency of the Highland Society of Agriculture was long confined to dukes, and only recently descended to a marquis. There are societies who prefer a patron to a brother chip, and who are not always so fortunate as to find a man of fashion and a man of unquestionable science combined in such a President as the late Sir Roderick Murchison.

The history of the Institution of Civil Engineers is almost the history of the profession as a profession, but we must remember that

"*Fortes vixerunt ante Agamemnon;*"

men of greater genius, perhaps, than the many who are now qualified to undertake any engineering work at short notice if the funds be provided, because the mathematicians, the millwrights, the stonemasons, the watchmakers, who became engineers by accident, and succeeded by force of genius, had neither professional brethren nor stores of books and manuscripts to consult, nor a class of mechanical inventors at their command, nor even the mechanics to execute the tools they were obliged to invent. But the law of supply and demand has prevailed. The enormous capitals invested in railways raised the position of the engineer from the comparatively humble grade he occupied in operations connected with water-works, canals, docks, and mines, and made it essential that he should have an early and general education to fit him for a social position not second to the most successful in intellect and in income (a most important point in England) of the leaders of the Bar. Indeed, it may safely be asserted that in this country, where every success bends to political success, science never received any honour with the multitude—the plutocracy of bankers and country gentlemen—until embodied in a railway engineer who could own studs, yachts, and grouse moors, give dinners, and stand contested elections.

In the address of Mr. John Fowler, when President, he sketches out the line of training and preparation that must be pursued by a candidate for success as a modern English engineer:—

"1. General instruction or a liberal education.
"2. Special education, as a preparation for technical knowledge.
"3. Technical knowledge.
"4. Preparation for conducting practical work,

"I will begin," he continues, "by supposing a boy of fourteen, in whom his parents have discovered a mechanical bias, who has made good progress in his general education, and especially in arithmetic, is of strong constitution, possessed of considerable energy and perseverance—*qualifications without which it is useless to make him an engineer.*"

The period from fourteen to eighteen should be devoted to the special education required by an engineer, during which mathematics, natural philosophy, land surveying and levelling, drawing, chemistry, mineralogy, geology, strength of materials, mechanical motions, and the principles of hydraulics should be thoroughly mastered.

To accomplish these studies, and, in addition, to make considerable progress in the living languages, French and German especially, it will be necessary to sacrifice to some small extent his classical studies and pure mathematics; and it is, in fact, the partial omission of these studies, and the prominence of those I have enumerated, which constitute a "special education."

If from fourteen to eighteen the boy has made all the progress in these studies which can be reasonably expected from fair abilities and more than average perseverance, the next step is of great importance, and is one respecting which some difference of opinion will exist.

At eighteen a boy, if duly prepared, may either be at once placed in the office of a civil engineer for a period of four or five years pupilage, or he may be placed in a mechanical workshop; or he may be sent to one of our great universities, and any one of these courses may be the best under particular circumstances, such as local convenience, or as the social position of parents may dictate.

It cannot be doubted that a period of 12 to 24 months may be very profitably spent in manufacturing works, before passing into a civil engineer's office; but in that case the greatest possible care must be taken that the works selected are adapted in themselves to impart the desired information; and that proper organization exists for carrying out strict office discipline, regularity of attendance, and due diligence; and that assistance be given systematically to the pupil to enable him to obtain all the advantage possible from his stay at the works.

It is of the greatest importance to the future success of the engineer that during his professional preparation he should continue his studies of mathematics and scientific works relating to his profession, and also of modern languages.

In the case of its being intended to send the boy to Cambridge or Oxford, it is indispensable that all preliminary professional work, such as a practical knowledge of mechanics, mechanical drawing, surveying and levelling, should be mastered before going to the university, because it can scarcely be expected that he will submit to the drudgery of learning them after his return from a three years university course, then at the age of, say 22. Probably the best plan will be to take him away from his scholastic studies somewhat earlier than 18, if it be intended that he should go to the university, and to take especial pains to make him accomplished in the preliminary work of the draughtsman, the surveyor, and the mechanic; so that when he has taken his degree and enters as a pupil in a civil engineer's office he will at once commence useful and interesting employment, and will not require more than three years pupilage.

If arrangements can be so made, and assuming a boy has worked well at school with his general studies, and subsequently with his special studies and if from the age of seventeen or eighteen he does justice to his opportunities in a good workshop, keeps up his knowledge of the modern languages, proceeds to Cambridge or Oxford, taking a good degree, and afterwards completes his studies as a pupil with a civil engineer, probably such a course would constitute the best possible preparation and training which could be obtained; but at the same time it cannot be doubted that it is a somewhat hazardous combination, and can only be successful with great determination on the part of the pupil to keep his future career always in view, and to prepare for it accordingly, as well before going to the university, during his college career, as after he leaves it.

With respect to the special preparation of young men, between the ages of fourteen and seventeen or eighteen, several of the largest and best proprietary schools and colleges in this country have special classes and departments for the study of the applied sciences; and thence well-prepared pupils are annually sent out to commence their career with engineers, architects, and surveyors; but still the character of this special preparation, in its theoretical branches, is not considered quite equal to that of France or Germany for the civil engineer.

It is true that nearly all continental nations have an advantage over this country in the power which the nature of their government gives them of concentrating, in one recognized official school for the preparation of civil engineers, all the best available talent of their country.

This plan does not exist in our country, and on the whole we rejoice that it does not; neither does the inducement of Government employment form the chief stimulus to our exertion, for which we are also thankful; but at the same time no good reason can exist why the opportunities of acquiring theoretical preparation in this country should be inferior to those of the Continent; and I have the confident hope, from the anxiety which is now manifested to increase the ranks of our profession, and the desire to have the best possible preparation for it, that even in the theoretical branches we shall shortly have to acknowledge no inferiority to any other nation. In the practical branches we are admittedly superior.

In drawing attention, however, to a comparison between our own and other countries, let me be guarded against the possibility of being understood to suggest that this theoretical equality ought to be obtained by any sacrifice whatever of our undoubted great practical knowledge; indeed, on the contrary, I think that the attention to the greater opportunities which young engineers in this country enjoy, by reason of the number and character of our new public works, than is attainable in other countries, should be constantly encouraged to the utmost possible extent, and that our old superiority as practical engineers should be ever maintained.

We will now suppose that the general education and the special instruction have been completed, the short probationary pupilage in workshops has been gone through, languages and mathematics kept up and improved, the university course in certain cases completed, and the period has arrived for entering a civil engineer's office.

In selecting such office for a pupil, it is important that it should be well organized and not be too large; that the engineer should be a comparatively young and rising man, and be accustomed to take pupils; but these should be few in number, and bear some proportion to the number and extent of the works in usual course of construction under the engineer's direction.

It is not necessary to follow the pupil when once the engineer's office is entered with any detailed advice, because he is no longer a boy, unable to appreciate his position and duty; we assume that he has been highly educated and carefully trained, well knowing that his future success or failure will depend on the degree of diligence with which he avails himself of the opportunities of acquiring knowledge during his pupilage.

The work in the office and in the field should be done to the best of his ability, and after the pupil has become a skilful draughtsman, and is capable of taking out quantities of engineering works, and preparing detailed estimates methodically arranged, he will then probably proceed to work out details of designs, and make calculations of strengths and strains, and thus become of real value in the office, at the same time making substantial progress and rapid improvement for himself.

He should avail himself of every opportunity of mastering the purpose and the principles of construction of the work brought to his notice both in the office and in execution; he should ascertain the cost price of all the materials and workmanship employed, separating the items into every minute detail; and he should continue this practice systematically with all works on which he is engaged.

The information which, amongst much beside, should be obtained during pupilage, and which is necessary to constitute a sound engineer, is—

1. A fair knowledge of the most fitting material for any given work, under any given circumstances.

2. The power of designing any ordinary work with a maximum of strength and a minimum of material and labour.

3. A knowledge of the means of ascertaining the cost price of any ordinary engineering work.

The information or knowledge included in this brief enumeration may be called practical knowledge; and it cannot be too often urged upon young engineers that theory and practice must always go together, hand in hand, and that they are not only not inconsistent or conflicting, but that they are necessarily united, and must both be fully developed in the same person before he can become a properly qualified "civil engineer."

The period of pupilage should be from three to five years, depending on the circumstances which have been previously indicated, and, in addition to his attention to the office and outdoor works, it will be well, while keeping up his preparatory studies, especially mathematics, that he should improve his acquaint-

ance with the French and German languages, and keep up his knowledge of their engineering literature, and also avail himself professionally and personally of the advantages offered by this Institution.

In the case of the mechanical engineer, however, it will be seen that although all scholastic and scientific training should be the same as that previously described for all other branches, the period of pupilage of the mechanical engineer must necessarily be passed chiefly in large workshops or manufacturing establishments.

Towards the education of the civil engineer, the Institution, which has risen in numbers and in wealth with the prosperity of the profession (during the years that our railway system was, if not completed, placed in advance of every European nation), has greatly contributed by the comparatively recent creation of a class of students, by the collection of a magnificent library of printed and manuscript books and drawings, by its Transactions, which contain a faithful record of almost every important engineering work, and not least by the opportunity it affords of free intercourse that it has afforded between the young and the experienced, and between the different branches of the profession. In fifty-four years from the meeting of the half dozen students has arisen an Institution lodged in a building at a cost of many thousand pounds, which, if not very imposing in its external appearance, is internally well adapted to its uses, provided, as before mentioned, with a library rich in professional works and drawings, in possession of considerable funded property for the purpose of rewarding the literary efforts of its members, supported by nearly two thousand subscribers, divided into three classes—members, associates, and students—holding periodical meetings, whose papers of a strictly professional character are read, discussed, and afterwards recorded in Transactions, often illustrated with very expensive drawings and diagrams. Twice in the year the "eminent engineer" who happens to be President invites the presence of distinguished members of both Houses of Parliament, without reference to party divisions, and of the other aristocracy of art and science—once at a *conversazione*, which has several times been honoured by the presence of Royalty, and once at an annual dinner, a festival without which no English association would be complete. The *conversazione* have long been celebrated for the loan collection of pictures and works of art with which the walls of the reception-rooms are adorned. At the last, a very successful attempt was made to bring together "paintings and water-colour drawings relating to "the construction of roads, bridges, railways, aqueducts, canals, "river navigation, and docks." The restriction did not exclude works of Albert Cuyp, Ruysdael, and Canaletto, amongst old masters; or of J. M. Turner, Wright (of Derby), Frith, Elmore, Hook, Cooke, Stanfield, and others equally illustrious of the modern school, mingled with drawings and photographs of a more strictly technical character than "The Rialto," "View of the "Dort," or "Bridge over the Elbe." The successful modern engineer has been remarkable (perhaps since the lead was given by the late Robert Stephenson) for his liberal patronage of art. At the last annual dinner of the Institution of Civil Engineers, amongst several very distinguished guests who honoured the President, the veteran Vignolles, by their presence, was the Right Honourable Robert Lowe, Chancellor of the Exchequer—in the commencement of his career a Double First-Class man of Oxford, and Fellow and Tutor of Magdalen College. In the following words he described the character and position of the profession by which this Institution of Civil Engineers was founded and is supported:—

Your profession, gentlemen, is not only noble in theory, but beneficent in practice. It is no longer thought enough for a man to pass his life shut up in a room, engaged in speculations that disdain to be useful; but the idea of Lord Bacon has fully penetrated our present men of thought, that science is never more nobly employed than when its labours minister to the wants or add to the enjoyments of the poorest and humblest of mankind. It would ill become me to speak of the feats which have been performed in this direction. Since I can myself remember, it is bewildering to think of the progress that has been made. Gas, steam, electricity, are not creations of a remote age, but they have come into existence within the last sixty years of this century; and when I think of what has already been accomplished, I cannot help looking forward with increased wonder and hopefulness as to what must be reserved for engineers to accomplish in the future, and it would almost make one wish to come back for a day fifty years hence, if it were possible, to see what new achievements had been made. I congratulate you, gentlemen, on what you have done for yourselves. With your own right hand you have gotten the victory. You have had nothing from the Government, nothing from endowments, nothing from any one but yourselves. Some of you have earned honourable wealth, others honourable competence. You are bound to each other by this great Institution to develop still further the spirit by which you have been animated, and to carry still higher the torch of fame which has been handed to you by your predecessors; and I take upon myself to predict that great as have been the achievements of your predecessors, they will be as nothing to what is reserved for you in a not remote future.

The war over, Mr. Street's monastic design for the Law Courts is producing a discussion that cannot fail to lead to good. Architecture within the recollection of the present generation has improved immensely externally. This may be seen in the situations where improvement was least to be expected. The square box house, with a door in the middle, and as many square holes as required for windows, is now almost a thing of the past. In the very cheap suburban neighbourhoods, where the houses go from £25 to £40 a year, some architectural ornament, some break in the line of terrace, by bay-windows and porches, is essential to obtain tenants. Iron in good forms comes in where marble columns could not be afforded, and ornamental bricks, with stone dressings, take the place of miserable stucco. Then, again, the Dissenters no longer go to carpenters for their style of chapels. The Unitarians were, we believe, amongst the first to patronize the late Sir Charles Barry at Manchester; since that time the Wesleyans, the Congregationalists, and other sects, have built chapels of the most elaborate, and frequently of the most elegant church forms of Gothic architecture. In some respects, we have fallen out of the frying-pan into the fire. A very considerable number of the accomplished young gentlemen who pay heavy fees to fashionable architects are more fit to adorn the walls of picture-galleries than to construct buildings fit to stand or to live in. Now, a man trained by an apprenticeship in the workshops of any one of the great building firms may be very deficient in taste, but he has neglected his opportunities if he does not understand the art of construction, and the qualities of such materials as are used by builders, including iron. We are not prejudiced in favour of Mr. Welby Pugin; he has taken a great deal of pains to write himself down as a controversialist with more passion than judgment, full of prejudice against certain individuals, and incapable of an impartial appreciation of the works of any one he does not like; but he understands his business as a builder, whatever may be his position as an architect, and he is not far wrong in the following extract from a letter to *The Times*:—

If architects are to know their craft, they must commence working the materials for which they will afterwards have to give designs. The present system of architectural students beginning and ending their studies in the office of their master is the primary cause of the evils which exist. They may draw to perfection, but unless they understand what is practicable, and what would be the effect of what they do draw, they can never become more than mere artists. Hence so many of our buildings are realizations or models of fantastic and imaginary pictures, instead of being true buildings constructed from plans, the result of practical knowledge and of deep thought. The remedy for all this is simple. Send every architectural student to the bench, the banquer, and the anvil; thence to the laboratory of the chemist and to the lecture-hall of the geologist; only after such a training is he fit to enter the architectural drawing office. Having served his indentures, a year's travel is essential before commencing practice. Then in ten years England would possess a school of architects second to none; and thus, by going back to the fountain-head of first principles, renew the architectural fame of our forefathers.

The ridiculous scheme, with which Mr. Scott Russell's name was connected, for a steam raft carrying railway carriages to a new port near Calais, has been dissected with unsparing vigour in a letter to a daily paper by an engineer, under the signature of "W." We will not follow the scalpel of "W." over this stillborn corpse, Mr. Russell's last abortion, but begin with what ought to be the beginning of all such schemes—the estimate of profits. The projectors of the Steam Raft and Island Harbour calculate on each vessel making three passages daily, and on an annual conveyance of nearly a million passengers and a million tons of goods—we do not reduce either by the few thousands below a million stated with pretentious accuracy. "This is four times the "present passenger traffic, and probably exceeds the whole of "the goods traffic between all the ports of England and all the "ports of France, except the coal traffic"—a manifest absurdity either way, that passengers should be quadrupled because sea sickness was abolished, or that Liverpool, Dublin, Hull, Southampton, and London should all forward and receive their goods *vid* Dover. The writer concludes with the suggestion we have repeatedly made. For something over half a million—a million would be a manageable sum—the port of Boulogne could be adapted to receive steamers of the capacity of our Holyhead boats. Such a sum English railroad capitalists would be willing to advance to the French Government on easy terms, without requiring any special privileges, and also to make any needful additions to British harbours. Those who have made the passage between Holyhead and Dublin know that the boats leave nothing to be desired either on deck or in the spacious cabins.

The French Government must do something that will not displease any party, and not cost more taxes. Here is something safe to do. In the discussion on the French Budget a curious but not unnatural mistake is made by one of the ministers opposing an income-tax on land. He shows that the tax on English land does not amount to one-eighth of the amount charged on the same property in France. He has evidently calculated the land-tax only; add the local taxation, which is all included in the National Budget of France, add the income-tax paid by landowners and by farmers, and the discrepancy between the taxation of land in England and France will be by no means remarkable. The error is of the same character as that which compares the cost of English government with that of the general government of the United States, without adding to it the separate cost of the governor and legislature of each Federal State.

After the numerous recent disclosures of mismanagement on continental railways in every particular, the most inveterate English *doctrinaire* will hesitate to repeat those phrases, once stereo-

typed, on the superiority of the continental much-regulated system over our own free enterprise. And certainly the disciples of Mr. Matthew Arnold, that apostle of sweetness, light, and intellectual Cæsarism, cannot find much encouragement in their favourite example—France. There, in every great catastrophe, the unofficial public are helpless, waiting on their providence, *l'administration;* while selfishness reigns supreme among the shopocracy and the peasant proprietors, who ought, according to the abstract theories of our levellers, to be all brothers, considering that they are untroubled with an hereditary landed aristocracy, and in possession of the little freeholds which are supposed to produce every public virtue. Our latest illustration will be a comparison between the conduct of the two countries in the case of a frightful railway accident. The other day an accident happened to a tidal train to Boulogne—an accident not quite so severe as that at Staplehurst, which cost the South-Eastern Railway between twenty and thirty thousand pounds. A passenger, under the signature of "W. L. L.," describes the accident in a letter to a daily paper:—

I cannot help saying that there seemed to be no head among the officials—no authority to direct or advise—no one in command at all equal to the emergency; and for nearly two hours there was no medical man to see the wounded, who were left chiefly to the care of the passengers, who did what they could to wash away their blood and soothe their sufferings.

During some five hours we were kept at this wretched station, without food or refreshment of any kind—at one time ordered to get into a train which had come down from Paris, then again commanded to descend and wait for further orders.

The lady passengers and little children were especially to be pitied, left as they were without a word of comfort, explanation or direction, so far as I could hear, from any one on the part of the railway authorities.

At length the passengers for Boulogne were, without luggage, or with such fragments as they could pick up, obliged to walk through the snow, past the scene of the accident of the morning, to a train at the other side, which took them to Creil, where the Calais train, also detained, carried them on to Calais.

There the absurd passport farce was gone through twice in a quarter of an hour at the station, and again on going on board a wretched little steamer, which took the ground twice while steaming out of the harbour.

The night was dark, the descent into this steamer was difficult and dangerous, and sufficient lights were not provided on board.

Even when we were transferred to the larger steamer there were no refreshments or comforts to be had suitable for tired and hungry travellers, and the result was exactly what might be expected—faintness, illness, and intense misery.

What a contrast to the fatal scene at Staplehurst, where the telegraph at once brought railway officials from the nearest station, where the resident neighbours, and especially the cottagers, rushed to give assistance. The French officials were wrapped up in "forms and regulations." The peasantry under their blessed system, and as we can say from personal experience, gloat over the sufferings of *ces citadins*. We commend the arrangements at the port of Calais to the consideration of the writer in the *Spectator* who thought that the railway embarkation system at Dover "would be endured by no other nation in Europe." The fact is that the much-praised French organization is excellent with plenty of time and plenty of officials to work the machine, but, like a steam-pump in a village well, when it breaks the villagers must go without water.

Mr. Bazalgette has prepared a scheme for collecting the sewage of the Thames Valley above Richmond, which is successful in uniting the opposition of every one interested, and concentrating all the faults possible in sewage irrigation. We do not agree with Mr. Common Councilman Knight that the sewage ought to be carried away and poured into the sea, but we do say, as we shall show in our next "Notes," that Mr. Bazalgette has neither the scientific knowledge nor the practical experience required for dealing with such a modern undertaking as a reproductive sewage farm. As an official engineer, diplomatizing, on the one hand, with the difficulties of a Board, and, on the other, executing for them ordinary engineering works for which precedents are to be found at every step, he is perfect. What he does not know he knows where to find, and whom to employ. But this sewage work requires for success a man of more than ordinary ability and originality. Now, Mr. Bazalgette's safely lies in common-place, and, like all common-place people, he has a terrible dread of calling in assistance that might overshadow him, and lead his Board to suspect that his works were not equal to his manners; for of him might be said, as of another English engineer not employed on the Suez Canal by M. de Lesseps, "*Il est parfait—pour le salon.*"

Circular to Gas Companies.

THE year which has just expired will be rendered memorable, chiefly, so far as gas affairs are concerned, by the passing of the Gas-Works Clauses Amendment Act, 1871. Very early in the last session, the Board of Trade startled the gas world by the introduction, without notice, of a Bill which we were prompt to denounce as a measure threatening confiscation to gas companies, and calculated seriously to discourage private enterprise. It is unnecessary now to recapitulate the objectionable features of that obnoxious measure. The Bill was immediately withdrawn, in the face of the thoroughly roused opposition of the gas interest throughout the country. An amended Bill subsequently introduced by the Government—in which the clauses in the former Bill which excited the greatest opposition did not appear—was, however, successful; and the Gas-Works Clauses Amendment Act, 1871, is now the law of the land. Looking back over the stormy period between the introduction and withdrawal of the first Bill, we see reason to congratulate our subscribers on the energy they displayed in defence of their interests, and find encouragement in the fact that constitutional opposition obtained such a decided success. It may be some years before the equitable interests of gas undertakings are again so seriously threatened; but malevolent influences are still at work, and at any time an ambitious official ignorant of the working world, who has spent his life in the routine of a Government office, or that still more dangerous character, a gentleman whom wealth and position have placed nominally at the head of the trade of the country, may be induced by political motives to attempt the confiscation of gas property. Under such circumstances, it is consolatory to remember that the House of Commons may still be confidently appealed to in defence of legitimate rights. But past successes must not be allowed to relax the ardour of opposition. In the face of such contingencies as we have alluded to, it is necessary to maintain a compact organization to resist unwarrantable attacks upon the rights of private enterprise.

Apart from the Act just mentioned, there is nothing in the gas legislation of 1871 which now calls for notice. We have before dwelt upon the principal features of the several Acts passed in the last year, and need not again refer to them.

The year has not been prolific in inventions which have called for particular notice, notwithstanding that the list of patents continues to teem with novelties, few of which are ever heard of elsewhere. The recent revival of speculation, however, has brought one into prominence which for some time threatened to follow thousands of others into oblivion, and to-day shares in the Patent Gas Company have reached a premium such as has never before been attained by shares in any gas adventure. Time alone will show how far this extravagant expression of confidence is justified, but we may note to-day that the doubts we have expressed as to the value of Dr. Eveleigh's process seem so far participated in, that the directors of the company have called upon Dr. Odling and Mr. Keates to make a complete investigation into the merits of the invention; but not, be it remarked, at Barnet, where the gas could be examined at some distance from the works, but only at Peckham, where we believe only one small house is lighted. The difference between lighting a small house and lighting a large district is very great, but still if the investigators start with a perfectly clean plant we see no reason why the result should not be to some extent satisfactory. It will yet remain to be proved that the promise of small workings can be maintained by operations on a large scale. The oxyhydric light appears to make no progress in this country; we read, however, that preparations are being made to give it a somewhat extended trial at a railway station in Vienna. The latest novelty, which gives every man the opportunity of becoming his own gas-maker, we have very recently alluded to, and need not further mention. It is satisfactory to find that with all these excitements the confidence of the public in the stability of *bonâ fide* gas undertakings remains unshaken. Our annual list of dividends and prices which we publish to-day shows that at no period in their history have gas companies been more prosperous, and consequently at no time have their shares realized such large prices. As a further illustration we may mention the sums given for shares in the Maidstone Gas Company, sold the other day by auction, at which £25 shares, paying 10 per cent., fetched £51 to £52; others of the same nominal value, paying 7½ per cent., brought from £39 to £40; and a third lot, paying 4 per cent., £25 to £26. With such facts before them no one need at present feel any alarm as to the value of their gas investments.

One thing has recently created a little uneasiness in gas circles, and that is a general deficiency in the supply of our prime material—coal—the enormous demand for which seems, for the moment, to be in advance of the labour obtainable for raising it, or the means of transport. This state of things, however, must soon be righted, and as no fear of exhaustion need be entertained for a century or two, the matter will create no alarm. In view of present disturbing influences, however, it may be reasonably anticipated that the price of coal will advance more rapidly than it has hitherto done. Some increase in the cost of production of gas may also be expected in consequence of the general movement for shortened hours of labour and increase of wages, inaugurated during the past year. Every case in which these demands are made will have to be decided on particular considerations, of which only the individual managers can judge, and it

will be well for them to be prepared beforehand with a decision in case pressure be brought to bear on them.

Although the ceremonial inauguration of the Beckton works took place in the last month of 1871, the real commencement of working at that station may properly be classed among the events of the year just past; and we may here offer our hearty congratulations to the company and their engineer on the great measure of success which has attended operations on such an unprecedentedly large scale—still however to be extended. The concentration of the manufacture of nearly one-fourth of the gas supplied to this vast metropolis may not be viewed by every one with complete satisfaction; still the idea was grand, and it is being grandly realized. The unfortunate accident to one of the gasholders, which occurred so soon after the opening, was a catastrophe no one could have foreseen, and brings no discredit to the original design and arrangements. The Beckton works are, and will be for years to come, the grandest gas-works in the world, and they do the greatest credit to the skill of the engineer who planned them, and to the enterprise of the company who dictated their erection.

In concluding this brief retrospective, and to some extent prospective notice, we can only again congratulate gas companies on their past prosperity, and express a hope that the lessons gained by past experience, and to be gathered from present events, may guide them to a continuous prosperous management of their undertakings.

We publish in another column the report of the first three days proceedings in the Ryde Gas-Works Arbitration, reserving our observations upon it till the concluding three days are published, and the whole case is before our readers. We may be excused, however, for remarking that both parties, in their anxiety—the one to exaggerate, and the other to depreciate the value of the undertaking—have lost sight of the real question at issue, and raised a cloud of dust in the hope of its blinding the arbitrators and umpire.

We have to announce the retirement of Mr. F. J. Evans from the office of chief engineer to the Chartered Gas Company, after a service of nearly forty years. It has been long reported that his resignation would take place as soon as the Beckton works were in full operation, and it has now been made. Mr. Evans retires on a pension equal in amount to his full salary, and will, we believe, ultimately be elected to a seat at the board of directors.

The Surrey Gas Consumers Company have withdrawn from the proposed amalgamation with the Phœnix and the South Metropolitan Companies, but the reasons for this step have not yet been made public.

Legal Intelligence.

RYDE GAS ARBITRATION.

(*Before* C. E. CAWLEY, *M.P., and* THOMAS HAWKSLEY, *Esq., C.E., Arbitrators; and* H. A. HUNT, *Esq., Umpire.*)

WESTMINSTER PALACE HOTEL, THURSDAY, DEC. 7, 1871.

Mr. HORATIO LLOYD, Q.C., and Mr. MICHAEL, appeared for the Ryde Gas Company; Mr. CLERK, Q.C., and Mr. RICHARDS, Q.C., appeared for the Corporation of Ryde.

Mr. LLOYD, in opening the case, said he had the honour to appear, with his learned friend, Mr. Michael, on behalf of the Ryde Gas Company. His learned friends on the other side represented the Corporation of Ryde, who were formerly commissioners under an Improvement Act. The functions formerly exercised by those commissioners were now exercised by the corporation, who were also the Local Board of Health for the district. The gas company were also incorporated by an Act passed in the year 1866, previous to which period they were merely a company existing under a deed of settlement, dated the 20th of August, 1847, by the name of the Ryde Gas and Coke Company. In the year 1854 the Ryde Improvement Act was passed, and the gas company being then in existence, the following clause was introduced into that Act:—*Section* 85. "It shall be lawful for the commissioners to purchase by agreement from the Ryde Gas Company all the land, buildings, gas-works, gasometers, retorts, mains, and pipes of the said company, and also to contract for and purchase any other gas-works, gas apparatus, mains, pipes, and machinery within the town; and to purchase or rent, on terms to be agreed on, and not in exercise of any compulsory power, any land, not exceeding five acres, which may be necessary for the extension or improvement of the gas-works; and also to sell or dispose of the refuse of any gas; and upon any contract being made or entered into by the commissioners for the purchase of any gas-works, gas apparatus, mains, pipes, and machinery it shall be lawful for the owner or owners thereof to sell and convey the same, and all rights and interests therein, to the commissioners, for such price or consideration as shall be agreed upon for the purchase of the same: Provided always, that before constructing any buildings, gasometers, apparatus, or machinery for the purpose of manufacturing gas, or renting or purchasing lands for the establishment of gas-works, as aforesaid, the commissioners shall give notice in writing to the Ryde Gas Company, stating the willingness of the commissioners to purchase the existing gas-works, apparatus, pipes, machinery and other things belonging thereto; and it shall not be lawful for the commissioners to construct any gas-works, machinery, or apparatus for the manufacture of, or to manufacture and supply gas, unless and until the said company shall, for the space of six months next after the giving of such notice, neglect or refuse to sell and convey the same gas-works, apparatus, pipes, machinery, and other things, upon such terms and at such prices as shall be agreed between the commissioners and such company; or as, in case of difference, shall be ascertained and settled in the manner provided for by the Lands Clauses Consolidation Act, 1845." The Act which incorporated the gas company recited the fact of the establishment of the company under the deed of settlement, and also that "the company have constructed gas-works in the parish of Newchurch, in the Isle of Wight, and laid down mains and pipes in the streets and roads of the town of Ryde, and the neighbourhood thereof, and have for many years past lighted Ryde and its neighbourhood with gas." Then it recited that "the lands belonging to the company for the purposes of their gas-works are set forth in Part I. of the schedule to this Act." Then it recited (and it was important to call attention to this point) "that it is expedient that the company be enabled to purchase lands, or certain interests in lands, in the parish of Newchurch, which are included in the description in Part II. of the said schedule." It then recited "that books of reference and plans had been duly deposited," and proceeded as follows:—"And whereas the present capital of the company is £15,000, divided into 1500 shares of £10 each, and the company have no mortgage or bond debt. And whereas the company have from time to time, laid out upon the extension of their works various sums of money applicable to the payment of dividends to the shareholders, exceeding in amount £3750, which they are desirous of capitalizing. And whereas the population and buildings of Ryde and its neighbourhood have of late years greatly increased, and the demand for gas has also largely increased, and is still increasing, and the company have, from time to time, as occasion required, constructed improved works to meet the increased demands; and the company require further capital and powers to enable them effectually to carry out their undertaking, and to supply gas within the limits hereinafter mentioned." By clause 2 of the Act, the Companies Clauses, the Land's Clauses, and the Gas Clauses Acts were incorporated, and then by clause 5 the limits of the Act were defined. "The limits of this Act shall comprise and include the town of Ryde and the parishes of Newchurch, St. Helen's, Binstead, and Brading, and the extra-parochial place usually called Monckton Meads, so far as the same respectively are within a radius of two miles drawn from the clock tower within the company's existing gas-works at Ryde, all in the Isle of Wight, and county of Southampton." By the 6th clause the company were incorporated, and by the following clauses powers were given to them to carry on the undertaking, to recover rates, &c. The 21st section of the Act stated that "the capital of the company shall be £50,000, whereof £18,750, in this Act called the original capital, shall be divided into 1500 shares of £12 10s. each, in this Act called original shares, and £31,250, in this Act called the additional capital, which shall be raised in manner hereinafter mentioned." The 22nd section gave power to create the additional capital of £31,250, and the 26th fixed the limits of the dividends to be paid on each class of shares—viz., 9 per cent. upon the original shares, and 7 per cent. on the new shares. Then, by section 28, power was given to the company to borrow money on mortgage, and this also would be material: "The company may at any time, and from time to time after the passing of this Act, borrow on mortgage any sum or sums not exceeding in the whole £3500, and when and so soon as the additional capital by this Act authorized shall have been subscribed for, issued, and accepted, and one-half thereof shall have been actually paid up, the company may in like manner borrow any further sum or sums of money, so that the total amount owing by the company on mortgage do not at any one time exceed £12,500." There was only one other clause to which it was necessary to call attention—viz., clause 77: "Nothing in this Act contained shall prejudice or alter the operation or effect of section 85 of the Ryde Improvement Act, 1854, provided that the powers of the commissioners under that Act, with reference to purchasing the gas-works, shall be acted upon within five years from the passing of this Act." Those commissioners who are now the corporation gave notice to the gas company on the 14th of February, 1871, that they were prepared to purchase their works; and the company, knowing the alternative that if they refused to sell their undertaking the corporation had power under the special provisions of their Act to establish works of their own, consented thereto. Accordingly, the present inquiry to ascertain the value of their undertaking was held, Mr. Hawksley representing the company as arbritator, Mr. Cawley acting as arbritator for the corporation, and Mr. Hunt as umpire. It would be necessary that he (Mr. Lloyd) should give to the court a slight history of the Ryde Gas-Works. They were established in the year 1847, and at that time Ryde was a comparatively small place. Since then, as was well known, it had extended and enlarged beyond all reasonable calculations. There was probably no town in England—not a manufacturing town—which had made such material progress as the town of Ryde had made during that length of time, and at the present moment the land available for building, &c., required for that purpose was something more than ordinary. There was no question also that the supply of gas in Ryde and the adjacent district had been rapidly increasing with the growth of the town, and, therefore, as might naturally be supposed, the means of supplying that gas had been increased to meet the demand. Up to 1866, when the company obtained their Act, the works were upon a scale, perhaps, not so competent as could be desired, but having obtained power to raise an additional share capital of £31,250, and a further sum of £12,500 by mortgage, the company proceeded at once to extend the works—in fact, to re-erect them; and certainly he might say there was no question that for their size they were now as complete and perfect as it was the privilege of any one to see. Under the Act of 1866 the company had raised in June last £9000 by shares, and they had also obtained a loan of £2000, which had since been paid off, so that the property was entirely unincumbered. That being the case, the company would have no need to go to Parliament again within any reasonable time for further capital or powers, and consequently neither the illuminating power of their gas, nor the rates of dividend paid by them, could be compulsorily altered, nor could any additional restrictions be put upon them. They knew exactly what price they could get for their gas; they knew exactly what capital they had available for extensions. They were now paying dividends up to their maximum rate, and they had also been able to pay up some deficiencies of back dividends out of their earnings. The total amount of share capital raised by them before the passing of the Act of 1866 was the £18,750 recited in that Act; since then they had raised £9000, and a further sum of £4000, making a total of £31,750. Of this sum they had actually expended upon the works, plant, mains, &c., £28,890 19s. 2d., and they had paid off the temporary mortgage debt of £2000. The map on the wall showed the position of the company's works, and the district within which they were authorized to supply gas. The works lay in a valley, and occupied the best position in which such works could be situated, because there was not a point to be supplied from them that was not at a higher elevation. And this further advantage they had, that, being established in that locality in the first instance, no one could challenge their right to exist there—a matter of great importance, because there was not another site in or about Ryde in which gas-works could be so conveniently placed, either with regard to the supply of gas or the delivery of coals for the purpose of manufacture. It might also be mentioned that a tramway was now in course of formation close to the boundary of the company's property, along which coals could be brought for delivery at the works, so greatly diminishing the cost of transit, and, as he understood, a new pier and quay were to be erected at which vessels of greater burden could discharge than could now avail themselves of the existing accommodation. The buildings on the company's works were most of them recently erected, and all perfectly good and substantial with the exception of one or two portions of the old works; in fact, the greater portion had been put up since the passing of the Act of 1866. It was hardly possible to imagine better works, more compact, or more conveniently situated, while it would be seen that there was room for extensions to a considerable extent. (Having referred to plans and photographs, showing the position of the works, the character of the buildings, and the capacity for increased manufacturing and storeage power, the learned counsel proceeded.) It was not necessary, in addressing gentlemen so experienced in matters of this kind as the present arbitrators, to say that the principle now adopted in valuing such undertakings, was to ascertain the net earnings of the company, and supposing the company to have an actual monopoly by Act of Parliament to capitalize

those earnings at 20 years purchase. The first thing, therefore, to do in the present case was to ascertain what were the earnings of the Ryde Gas Company, a matter which, of course, depended upon the rental they received for gas to private consumers and the public lamps, and also the sum they obtained for residual products. He might mention that so great was the demand for coke at Ryde, that not a single pound weight of it was ever to be found upon the premises of the company, and that the demand exceeded the amount of supply. The particulars of the company's net earnings would be laid before the arbitrators, as worked out by Mr. Spice, than whom a more competent man could not be found. And he submitted that it was hardly necessary to confirm these figures, because the books of the company had been most carefully examined on the part of the corporation, and every possible opportunity had been given to them to inspect the accounts. Everything required had been laid before them, and they had had every means of testing the accuracy of each single item. In dealing with this matter the company had taken last year's accounts, because, as would be shown, the concern was an increasing one. They were therefore perfectly justified in taking the last year's net results as that upon which the capitalization should be based. Indeed, it might be said it was so obviously an increasing profit that the company would be right in taking something beyond, but having regard to the circumstances, it was thought better to rest here, and not ask for more than the capitalization of last year's profits at 20 years purchase. The net income last year from gas and meter rental and from residual products was £7141 13s. 2d., after allowance for bad debts and other matters, as shown by the published accounts of the company; on the other side, the total expenditure was £4293 13s. 6d., leaving the net profit for the year £2847 19s. 8d. And he might state that there had not been the slightest attempt to reduce the charges in any way, they were the fair normal charges actually ascertained; there had been no attempt at saving, and no diminution in the amount of repairs, and such things, for the purpose of diminishing the charges against revenue. On the other hand, he was justified in stating that the income was continually progressing. For the year ending June, 1868, the gas-rental was £4912; June, 1869, £5151; June, 1870, £5352; and June, 1871, £6089. The first item, therefore, in the company's claim of capitalization was this sum of £2847, the net profit of last year; and taking its value at 20 years purchase, it amounted to £56,959 13s. To this there were certain additions to make. The first of these was in respect of surplus plant, which was found to be of the value of £3444, and the second referred to the surplus land held by the company, and applicable for future extensions of the works, £5530. The particulars of these valuations would be given in evidence. The result of the whole was to bring up the total value of the undertaking to £65,933 13s., exclusive, of course, of book debts and stock of coals, &c. This was a general outline of the case which he had to support. However looked at, it was clear that the company had a very profitable concern, and one from which they might expect to derive increasing profits. They would be handing over to the corporation a property such as was hardly to be found, and which they would step into at once without any outlay or drawback whatever. They would commence the work at once; they were not bound to reduce the price of gas, and they could apply the profits to be made to the benefit of the ratepayers; so that if ever there was a case this was one in which the vendors should be treated liberally. He was not aware that he had anything further to submit, and he was not aware that there were any points of difference between the parties which should make the case occupy much time. He asked whether it might be taken for granted that there was no question upon the accounts.

Mr. CLERK said he wished to see whether the statement of receipts and expenditure handed in was the same as in the published accounts.

Mr. MICHAEL said they were both taken from the books of the company.

Mr. LLOYD said there were certain charges in the published accounts which were not included for the purpose of this inquiry.

Mr. CLERK said there seemed to be no question that the statement, as far as it went, was correct.

Mr. LLOYD remarked that in the published accounts there were certain items not mentioned in this statement, because, although they were expenses actually incurred, they were not fairly chargeable against revenue. These items amounted in the whole to £234 14s. 7d. One of these was, interest on mortgage, £98 2s. 6d.; the mortgage being now paid off, this charge would not appear again. Another was for the premium—£4 16s. 9d.—on policies on certain lives upon which land was held, but that had also gone; refreshments had by directors, £78 18s. 6d; interest at bankers; subscriptions to charities; arbitration expenses, etc., which would not occur again; and, therefore, in an inquiry of this sort, these items, amounting as he had said to £234 14s. 7d., were not charges which could be fairly put against revenue.

The UMPIRE: So, on the other hand, rents of property not required for the works. I understand Mr. Clerk to say that the statement, so far as receipts and expenditure are concerned, appears to be correct.

Mr. CLERK: For the year 1870-1.

Mr. *Robert Paulson Spice*, examined by Mr. MICHAEL.

I am a gas engineer, and have had considerable experience in connexion with gas-works. I have carefully examined the works of the Ryde Gas Company on several occasions, and have had ample opportunity of judging of their value as a going concern. I have known the works five or six years, and have observed their progress and extension during that period. I was employed by the Ryde Improvement Commissioners, under the Act of 1854, to advise them as to the desirableness of purchasing these works, when the gas company were before Parliament in 1866 for their Act of Incorporation.

Mr. HAWKSLEY: The commissioners had power under their Act of 1854 to purchase these works, but that power was not exercised.

Examination continued: I have had the opportunity, particularly throughout the present year, of watching the progress of the works, and have arrived at an estimate of their value for purchase by the corporation. The amount is £65,933 13s. In doing so I have adopted the valuation of land surveyors as to the value of the surplus land. The first point was to arrive at the net income of the company. I find that their revenue is derived from the receipts for gas and meter rental, £6089 16s. 7d., to which is added £1051 16s. 7d. as the receipts for residual products making a total of £7141 13s. 2d. From the gross revenue of the company has been already deducted a sum for bad debts and discounts, leaving this as the net available income of the concern. These figures are taken from the books and the last audited accounts of the company. On the expenditure side, to earn this income there was paid, for coals consumed, £2439 2s. 4d.; purifying materials and labour, £172 11s. 11d.; salaries and auditors fees, £347 4s. 10d.; and manufacturing wages, £455 10s. 1d.; rates and taxes, £171 7s. 2d.; retorts, repairing and resetting, £152 17s. 6d.; wear and tear, £117 4s. 8d.; meters, restoring and replacing, £52 14s. 1d.; stationery, printing, and stamps, £43 2s. 9d.; incidental charges, £15 17s. 10d.; law expenses (1867-8), £6 12s. 10d.; tools and working plant, £117 9s. 11d.; mains and services, repairs, &c., £75 19s. 10d.; public lamps, repairs, and lighting, £125 17s. 9d.; making a total expenditure of £4293 13s. 6d. Deducting that from the net income of £7141 13s. 2d., there is a net profit on the year of £2847 19s. 8d. In the published accounts of the company appear certain payments which are not properly deductions from revenue. These expenses not chargeable against revenue are £98 2s. 6d. for interest on mortgage; that ought not to appear as a charge against profit and loss any more than the whole amount of dividend paid to the shareholders; paid in advance to get deeds, £28 19s. 2d.; insurance premium on a sum to cover leasehold property on lives, not now payable, £4 16s. 9d. This is an extinguished charge, the policies upon which the payment was made having lapsed altogether. Then there is refreshment to directors, £78 8s. 6d.; interest to bankers, £16 10s. 4d.—*i.e.*, interest on capital which ought to have been raised. At the present time there is no interest to pay; in fact, there is no mortgage debt, or anything beyond current trade liabilities, which are more than met by the gas-rentals due and the stock on the premises. Then there is subscription to charities, £4 4s., and a small item of £3 3s. 4d. for arbitration expenses. All these are sums which clearly ought not to remain in the accounnt as against the revenue of the year. I do not take, on the other side, rents of property not used in the works, £99 10s. 5d., because I put the whole of the value of that property into the surplus land. The sum of £2847 19s. 8d. is therefore the profit absolutely accruing in the last year from the gas-works as an undertaking, after everything has been fairly and fully provided for and excellently kept up. These figures are based upon facts, and there is no estimate in it. Every figure is the absolute figure of the year. I have, however, tested them by estimates, and I find they are ample to keep up the concern. As a matter of fact, everything has been kept up, no regard being paid to the result for which this valuation is made—*i.e.*, nothing has been put off till next year in the way of repairs, therefore this year is a fair average specimen of the accounts of the company if they were going to keep on the works. I have taken 20 years purchase of the net profits in estimating the value of the concern, but that is hardly fair in this case. I think it should have been 24 years, as it is an exceptionally good concern. As a general rule, a company under an Act of Parliament is never taken at a less rate than 20 years. That has become the rule, which I was afraid to violate, or I should have put it here at 24 years. In several recent Acts of Parliament it has been taken at 24 years. The present condition of the works and plant at Ryde is admirable. There is not a slate off the roofs, nor is there anything that wants repairing except it may be in some minor matter, as perhaps a cracked wall in the old part of the establishment. The buildings are most substantial and satisfactory; they have been kept up in such a condition as to ensure the production of the revenue. Practically, the works are as good as new, and there is surplus plant beyond what is necessary to earn the income. The condition of the retorts is admirable. They are clay retorts. The amount set aside for repairing and resetting, £152, is about 1¼d. per 1000 feet of gas made. That is an ample sum. The £117 for wear and tear is at the rate of 1d. per 1000 cubic feet. Some of the retorts are old, some are new. They earned last year's income, and will earn the next. The cost of keeping them in that condition is one of the charges allowed for in taking the account. That is the actual expenditure in keeping them up last year, and with the same amount of expenditure they will earn the same profit again. The purifiers are as perfect as can be; they are exceedingly well designed, resting upon girders, and the whole arrangements are very good. There are four purifiers, but only three are doing the work now. The station-meters and governors are all to match. With regard to the mains, the best test of their condition is the loss to the company by unaccounted-for gas. Where the leakage is not more than it is at Ryde the mains cannot be in a bad condition. The unaccounted-for gas is only 13·7 per cent., which in such a town as Ryde, and considering the area covered by the mains, is very small. The number of retorts in the retort-house is 58; the largest number in use in any one day was 33, and that only for a day or a week. I have allowed a reserve of 3, or 10 per cent., leaving a surplus of 22. I multiply that by £22, which is the value of each retort, making the total value of surplus retorts £484. There were four purifiers, which cost in round numbers £1000. There are only three at work, sufficient for 3000 tons of coal per annum. If the purifier which is detached by cutting off the connexions be replaced in its original or intended position, so as to use all the purifiers, they would purify the gas produced from 8000 tons of coal per annum. But only 3-8ths of the purifying power at the works is required. The greatest make of gas on one day was 127,000 cubic feet, and there were only two purifiers at work for that quantity, there being always one off. Taking the surplus purifying power at 5-8ths, it works out the value at £600. The total gas storeage is 174,000 cubic feet. I usually allow a storeage equal to three-quarters of the maximum make; that gives a capacity of 95,250 as sufficient in this case, and leaves a surplus storeage of 78,758 cubic feet, which at £20 per 1000 works out to £1580. I get at the £20 as an estimate, and I find that it is about what the gasholder and tank cost. It is a very moderate expense; usually it would cost £25 per 1000 cubic feet. I have satisfied myself as to the construction of the gasholder and tank. The old gasholder, which has been erected 15 years, appears as good as new; the new one, which has been in use only five years, is as good as new. The foundations were difficult, but the difficulties were overcome, and the tank has never lost any water. There is an overflow to carry off the surplus water from rain, and there has been no water put into the tanks since it was first filled. Adding this £1508 to the other items, it makes the total value of the surplus plant £2664. To this I add, for proportion of retort-house, in which to place the 22 surplus retorts, and also the proportion of the purifying-house for the surplus purifying power at the works, £780, making a total of £3444 to add to the 20 years multiplication of the net profits. There is a large quantity of surplus land not required for the purposes of the undertaking—very valuable land available for future extensions. I have put down £5530 for that, adopting the figures of a local land agent in the county, and of Mr. Ellis, of Old Broad Street, London. It is a little in excess of my own valuation. The lamp-posts and lamps, for the public lighting of the town, belong to the company, and are all included in the purchase of the undertaking. The working tools and barrows also go with it. They are all in very good condition. My valuation is exclusive of the stock and book debts, and the street lanterns in excess of those on the posts. The bulk of the meters in use in the town belong to the company. Those which are in use to earn the rental go in the valuation. There is a sum charged in the annual accounts adequate to keep the meters in a condition to earn the rental. There is a sum in the account of £52 per year, which is larger than usual, to keep the meters up in perpetuity. Everything which contributes to the earning of the profit is included in the value. The progress of the company has been very great; the increase is at the rate of about £1000 a year. If the commissioners had bought the undertaking five years ago, when I advised them to, they would have saved £5000. The difference between last year and this is the difference between £5000 and £6000, dealing with the thing strictly in the same way as now. Looking at the condition of the town, the value of property there must increase. The capital of the company is £50,000; they have power, therefore, still to raise £18,250, and as their shares are always at a premium, the company will lose the advantage of that on the transfer of the works. They have power also to raise money on mortgage which may afterwards be converted into capital. They will lose the advantage of that also. They have no debts beyond current debts.

Cross-examined by Mr. CLERK: I have not seen the balance-sheets of the company for the preceding two or three years. I am not aware that the item of "Wear and tear" in the published accounts for 1870-71 is considerably less than for the year 1869-70.

Mr. CLERK: Take the item of "Retorts, repairing and resetting, for the year 1870-71." You have it £152 17s. 6d. What was it in the preceding year 1869-70?

Witness: I have not got it before me.

Mr. CLERK: The accounts will show it.

Mr. MICHAEL: It was £155 10s. 4d., as against £152 17s. 6d.

Witness: Retorts will last three years. The first year there would be nothing to do to them except patching, and the second the same. There might have been more expended on this item this year than last; if there had been, I should have taken the larger amount. The cost of new retorts and repairs to retorts go on year by year. One-third of the retorts are replaced every year. One penny per 1000 cubic feet of gas made will cover the expense to all eternity.

By Mr. HAWKSLEY: The retorts are 9 feet long and 21 by 14 inches diameter.

Mr. MICHAEL: The cost of retorts in 1871 was £152 17s. 6d.; in 1870, £155 10s. 4d.; in 1869, £377 0s. 10d.; and in 1868, £146 15s.

Mr. CLERK: The next item in the revenue account is £117 4s. 8d. for wear and tear. Can you give me in the same way the expense under that heading during the years 1868 to 1871?

Mr. MICHAEL: In 1868, £134 12s. 3d.; 1869, 146 7s. 2d.; 1870, £252 9s. 7d.; and 1871, £117 4s. 8d.

Mr. CLERK: Now, "Meters, restoring and replacing;" tell me what were the charges in the same years?

Mr. MICHAEL: 1868, £120 15s. 3d.; 1869, £91 16s. 4d.; 1870, £114 8s. 11d.; 1871, £52 14s. 1d.

Mr. CLERK: Dealing first with the last item, there is a considerable diminution this year in the cost of restoring and replacing meters. Were there less used with a greater consumption of gas?

Witness: If there had not been a diminution I should have made it, for it is an altogether exceptional state of things. The company had been making good deficiencies when it amounted to so much more. They had a bad lot of meters, which were discarded. They had been routing out all their old meters. I cannot tell in which of these years the greatest change in this respect was made. It should be well understood that the life of a meter is only from 10 to 15 years. Some of these meters existed before the company had their Act, and some had been in the consumers houses ever since the company started, between 20 and 30 years ago. The exchange has been going on ever since the company was remodelled. Something like 5 per cent. on their cost will maintain meters in their integrity. This is a sum in excess of that. I do not know when the meters were exchanged, nor how many.

Mr. CLERK: What reasons can you assign for the great difference in respect to the general wear and tear? You gave us £117 4s. 8d. for the last, or rather the current year.

Mr. RICHARDS: The average of the four years is £162.

Mr. CLERK: Can you tell us what circumstances there were to make such a diminution last year?

Witness: The large previous expenditure rendered it unnecessary.

Mr. CLERK: Would not that render it fairer to take the average of a number of years.

Witness: No; going through the company's books, I can tell whether it was sufficient or not.

Mr. CLERK: Is it not usual to take an average of years when the expense is increasing?

Witness: It is usual if you want an estimate of the cost of repairing. It would not be fair to take an average of bad working.

Mr. CLERK: But we are dealing with a thing said to be well worked. Is it not, under these circumstances, fair to take an average of years in ascertaining the probable expenses for the future?

Witness: In this case it may be; I do not know whether it has been.

Mr. CLERK: You say you have known the works for five or six years. Has it been extravagantly done in that time?

Witness: I am not prepared to adopt that word; it is a reflection on the management. If anything wanted to be done it was done. That might happen in one of these years.

Mr. CLERK: As a matter of fact, has there been an unnecessary amount of repairs done in any of these years?

Witness: I am not prepared to say.

Mr. HAWKSLEY: I do not understand, when you are speaking of so much per 1000 feet, whether you mean upon gas made or gas sold.

Witness: Gas made.

Mr. HAWKSLEY: Are all your observations made upon that?

Witness: I have tested several of these items in that way, and find it sustained.

Cross-examination continued: I was not engaged in the valuation of the Peterborough Gas-Works. The gasholder at Ryde, marked D on the plan, is the older one; it has been up about fifteen years. I have known gasholders to be in perfect health after forty years. According to general opinion that is about the average duration; but it just depends upon how the thing is started at first. I do not know that there has been rather a deficiency on the part of this company in increasing the size of their mains. The mains are adequate for what they have done and are doing in the way of distribution. There was a loss of pressure in one extreme case last October, which was reported to me, but that might be remedied. It was confined to a length of about 200 yards. The pressure between the works and that which was the worst point was reduced 16-10ths.

Mr. CLERK: I must still put it distinctly. Is it not a fact that the mains generally are very inadequate at the present time.

Witness: No.

Mr. CLERK: During your frequent visitations and examinations, have you not ascertained that there are frequent complaints with regard to the deficiency of distribution?

Witness: I have not.

Mr. CLERK: Do you know whether there are circumstances to justify the complaint than when the churches and large buildings are lighted the gas goes out in some of the private dwellings?

Witness: No; it should not be so. If it is a fact it may arise from local causes. Even in the case I have mentioned, where there was a reduction of 16-10ths in the pressure, if the fittings are right, the gas ought not to go out.

Cross-examination continued: I do not know it as a fact that in some parts of the town, when the churches and public buildings are lighted, the lights in the private houses go out. I have not made inquiries to ascertain whether there is much dissatisfaction in Ryde as to the price charged for gas. The company have been charging their maximum price. The total make of gas last year was 29,103,000 cubic feet. I have ascertained from the books that this is correct. The quantity sold to private consumers was 20,766,800 cubic feet. The public lamps are estimated at 5 feet per hour, though I honestly believe they consume 6 feet. The consumption of the 184 public lamps, at 5 cubic feet per hour for 3600 hours per annum, amounts to 3,312,500 cubic feet. I take the number of hours the lamps are actually burning. I have not seen the contract for the public lighting, but this is what the company are bound to supply. I know the company have exceeded their contract in this respect. The consumption at the town-clock is 104,304 cubic feet. There are 8 burners, each consuming 6 feet per hour for 2173 hours per annum. Upon the works of the company there are 20 lights altogether, burning, on an average 6000 hours, at 6 feet per hour, and consuming in the whole 720,000 cubic feet per annum. The consumption in the manager's and foreman's houses, for lighting, cooking, &c.—12 lights at 5 feet per hour for 2173 hours—amounts to 200,000 feet per annum. There is a slight clerical error in this last item. This makes a total of 25,113,100 feet of gas accounted for. The unaccounted-for gas amounts to 3,989,900 feet, which is 13·10 per cent. of the gas made, reckoning the consumption at the public lamps as only 5 feet per hour instead of 6, which I believe they actually burn.

Mr. CLERK: Now, in this estimate with regard to the value of the works, you put down nothing for deterioration.

Mr. LLOYD: Deterioration is wear and tear.

Mr. CLERK: Depreciation.

Witness: I do not believe in the word as applied to these works, kept up as they have been out of profits. I do not believe they ever will depreciate.

Mr. CLERK: You say that in making this kind of valuation, the works being well kept up, you would not make allowance for depreciation.

Witness: It is usual in old works to make some allowance, but in this case, the works increasing in value £1000 a year, it is not necessary.

Mr. CLERK: It was opened my learned friend, and it has been mentioned by you. Let me ask what arrangements are there for a tramway?

Witness: There is a tramway in the works.

Mr. HAWKSLEY: There is no depreciation in a public undertaking, except as between landlord and tenant in a rating case, because, where the works are kept up out of revenue perpetually, they are always earning profit. We may as well save a great deal of time upon that.

Mr. CAWLEY: I do not think we shall; that is not an interlocutory question.

Mr. HAWKSLEY: With works kept up for ever there is no depreciation, except as between landlord and tenant. This is a question I have heard a great deal of, and I think I thoroughly understand it.

Mr. CLERK: No one would dispute that proposition, if the works could be kept up for ever by the annual expenditure.

Mr. HAWKSLEY: They can; there is no difficulty about that.

Mr. CLERK: I was asking about the tramway. There is a line of railway in extension past these works to the pier. Is there any arrangement, or any power to make an arrangement, for a communication within the works?

Mr. LLOYD: There is by law. The Railway Clauses Act gives power to make lines to adjoining owners.

Cross-examination continued: There is no provision made for any siding at present; there has been no time for it yet. The coal used at the works is carted from the ship's side. I do not know whether all the coal is beached.

Mr. CLERK: There is no dock at Ryde.

Mr. LLOYD: There is a dock projected by the new pier company.

Mr. CAWLEY: I understood Mr. Lloyd to open it as a prospective thing.

Mr. CLERK: Have you at all considered, looking at the capital which has been expended, how much it costs to produce one million cubic feet of gas at Ryde?

Witness: No; I have not gone into that question at all.

Mr. LLOYD: If you take the capital as stated at £29,750, it is about £1000 per million feet.

Mr. CLERK: Taking the average of the great London companies, can you tell the average capital expended?

Witness: No.

Mr. CLERK: Taking the small companies, can you tell me the average expenditure per million feet?

Witness: There is nothing to be deduced from a calculation of that sort.

Mr. LLOYD: You cannot compare them.

Cross-examination continued: I have constructed a great many gas-works in the last 25 years. If I had to construct these works as they are, entirely new, I should think a fair price for them would be something like £35,000. They have been very cheap. I have not gone into the cost in detail.

Mr. CAWLEY: Is that irrespective of the mains?

Witness: No, including mains; these have been done very economically. I have claimed nothing as surplus in the shape of mains nor condensers. The company had begun to lay larger mains, but were stopped by the notice of the local board. If they had done it there would have been less unaccounted-for gas and more consumption.

Mr. CLERK: I think you valued in the Weymouth case?

Witness: I did. The proprietor of those works was very unfortunate.

Mr. CLERK: You put a value upon them of £55,000.

Mr. LLOYD: I can tell you the history of that case if you like, for I know the peculiar circumstances, but they are not applicable here.

Cross-examined continued: The capacity of the retort-house is in excess of the present requirements at Ryde. If in a few years it should be necessary to enlarge that house, it does not follow from the way in which the works are laid out, that some of the buildings would have to be removed. The coal-store is not in excess; they would want a new coal-store. It will be a long time before it is necessary to enlarge the retort-house. At present the retorts are set face to face on each side. It would be better, and would economize fuel, if they were set back to back. They are not so close now as to inconvenience the men. I have adopted the valuation made by the surveyors of the surplus land. I have taken the rates at the sum for which the company are actually assessed. They have recently been raised to what they are, and there is no complaint that they are underrated. I have not got the date in October last, when there was a loss of 16-10ths pressure in a portion of the mains. It was about the middle of the month, and at an hour when the maximum consumption was on—about eight or half-past eight in the evening.

Re-examined by Mr. MICHAEL: This loss of 16-10ths pressure was only in a small portion of the mains, about 200 yards. The initial pressure was 23-10ths, and the loss of 16-10ths was in a 2-inch main having a 4-inch main at both ends. The pressure at the works, when the lower lift of the holder is down, is about 3½ inches.

Mr. CAWLEY: Where was the 23-10ths?

Witness: On the outlet of the governor.

Mr. HAWKSLEY: But there was power to increase that pressure to 3½ inches, because they could load the gasholder to any extent.

Mr. CAWLEY: Their power was unlimited beyond that.

Mr. HAWKSLEY: Up to 3½ inches. A single gasholder gives a pressure of at least 3½. (To witness:) The loss of pressure was an exceptional case, confined to the small main?

Witness: Yes, and continues to this day, because of the business being in a transition state.

Mr. MICHAEL: Supposing the mains to be in such a condtion as is put to you by Mr. Clerk, it would involve a large outlay to increase the capacity of those mains. But supposing the money to be expended, what would be the result of increasing the calibre of the mains?

Witness: The result of an expenditure of £1000 would be to give a profit on that outlay of from 15 to 20 per cent—*i.e.*, without making any more gas, doing the same business, the profit of the company would be increased from £150 to £200 per annum. That would be without any reference to an increase of business, and the unaccounted-for gas would be less.

Mr. MICHAEL: Assuming the state of things which Mr. Clerk put to you, that when the gas in the large buildings was lighted the gas in the small buildings went out, it would be great economy to lay down larger mains?

Witness: The income might not be more than it is now, but it would cost less to produce that income. On the other hand, they would also sell more gas; that which now is lost in the shape of leakage would be sent through the consumers meters.

By Mr. CAWLEY: In some isolated cases the consumers would consume more gas.

By Mr. MICHAEL: If increased capital is called for it would bring increased profit to the company. This does not at all diminish the value of the works to a purchaser. It shows that there is capacity for an increased consumption of gas in some parts of the town, and therefore an increased profit value. An increase of expenditure leading to increased consumption does not entail corresponding increase in the cost of production or distribution. If the increase of consumption is equivalent to the saving of leakage, there is not a penny increase in the cost of gas. Another element is that the establishment expenses remain the same, but have to be distributed over a larger area. The effect of laying out £1000 a year ago would have been to effect the saving I have shadowed forth—the £1000 would have produced £200 additional profit, which would now be multiplied by 20, so that the company would have had £4000 for their £1000.

Mr. CAWLEY: Their concern would have been worth £4000 more now if they had expended £1000 a year ago?

Witness: Quite so.

Mr. MICHAEL: Supposing a larger amount had been necessary to be expended, would that have been likely to bring about a commensurate amount of profit to the company?

Witness: There would be a limit.

Mr. MICHAEL: I take it that the town is increasing considerably, and that additional mains are required. Could they have been laid down with an equal amount of profit to the company?

Witness: Yes; the establishment expenses remaining the same, they would have had a larger amount of profit.

Mr. MICHAEL: We have heard that, taking the average of wear and tear, and other matters, there is a less sum in the accounts for this year than in the preceding four or five years. Have you satisfied yourself that the amount charged this year is a fair amount, though there is a diminution?

Witness: No doubt of it. If I had found a larger amount charged, I should have reduced it to a sufficient amount. If I had found a smaller amount, I should in all candour have adopted it.

Mr. MICHAEL: Have you so inspected the works as to be able to tell the arbitrators that every necessary expenditure for wear and tear has been charged in the year?

Witness: Yes.

Mr. MICHAEL: Have you also, with respect to meters wear and tear, satisfied yourself that there has been no diminution of amount, though it is below the average?

Witness: I have taken the accounts, and seen how the thing has been worked. Meters can be kept in order at a charge of 5 per cent. upon the cost. There are manufacturers in London who will keep them in order for ever at that price.

Mr. CAWLEY: How do you reconcile that with your statement that the life of a meter is from 10 to 15 years?

Witness: I have not said so. I have referred to it as an opinion. The fact remains that there are first-class meter manufacturers who will keep them in order on those terms.

The UMPIRE: Do these contractors find new meters?

Witness: Yes.

Mr. LLOYD: 7½ per cent. is my experience.

Witness: That is seven and a half years.

Mr. HAWKSLEY: No; it is nine years.

Witness: I have had works, and therefore meters, for 14 years. The charge for the meters in that case has been 10 per cent., and I have found it cost me about half that money to maintain them in order.

Mr. CAWLEY: How many retorts are set in one bed at Ryde?

Witness: They vary. There are fives, and fours, and some settings of two; I think also there is one of three.

Mr. CAWLEY: The small numbers being for summer use.

Witness: Yes; they are mostly fives.

Mr. CAWLEY: I speak of it in reference to your evidence as to the surplus plant, because you cannot throw one retort out. I was anxious to know how the beds were arranged. You gave us as the net income you capitalize, £2847 19s. 8d. Will you tell me to what purposes the company can legally apply that amount?

Witness: They can apply that amount to maintain their dividends to the extent of 9 per cent. upon the old shares, and 7 per cent. upon the new, and can put by a reserve-fund to the extent of 10 per cent. upon their whole capital.

Mr. CAWLEY: But if that is the annual value in perpetuity, to what purpose can they apply a reserve-fund? For instance, can you tell me how much per annum is requisite to pay the dividends upon their capital?

Witness: £2597 10s. is what they can divide.

Mr. CAWLEY: You may show that at a certain price for gas they would receive a profit in perpetuity beyond what they are entitled to divide. You would not capitalize that at 20 years. You are assuming that they have a right in perpetuity to the £2847 19s. 8d., without any alteration of their works.

Witness: I may be, but I cannot see it.

Mr. CAWLEY: If you have not made that assumption, upon what assumption have you capitalized the 20 years purchase?

Witness: I have capitalized on the profits.

Mr. CAWLEY: Yes, on the assumption that they are entitled to those profits in perpetuity. If their income is beyond what they have a right to appropriate, they must reduce the price of gas.

Witness: Not till after they have a reserve-fund equal to 10 per cent. of their capital.

Mr. CAWLEY: But supposing this is in perpetuity, the effect would be they would have still further to reduce the price?

Witness: I think there is a fallacy there.

Mr. CAWLEY: The reserve-fund is to secure dividends and to meet accidents and contingencies. If you divide all that they are entitled to, I throw it out for consideration whether they can claim a right to a reserve-fund, which is a thing not to be divided but to be laid by. If they have already a reserve-fund, and claim for it, they must hand it over. If their works will yield a reserve-fund and the maximum dividend in addition, that is a security for the maximum.

Mr. MICHAEL: If that basis had been adopted, the co-efficient of 20 would not have been adopted. That is not an absolute sum arrived at, but by a consideration of the circumstances.

Mr. HAWKSLEY: I have had a practical case myself, where the security was so excellent that it was almost as good as the Funds. That was the case of the transfer of gas-works, and there they gave, not 20 years purchase, but a vast number beyond, because the dividend was perfectly secured against all contingencies.

Mr. LLOYD: We have taken 20 years purchase upon the ascertained income. If a deduction is to be made on the ground that we are not entitled to divide that income, I must increase the number of years purchase in proportion.

Mr. HAWKSLEY (to witness): I want to know a little more from you upon this matter of depreciation. You say you have allowed nothing for it.

Witness: Because there is no depreciation.

Mr. HAWKSLEY: The works are perfectly good?

Witness: Practically as good as new. There is no existing depreciation worth talking about.

Mr. HAWKSLEY: Is the power of the company with regard to price sufficient to enable them to lay by a reserve-fund, supposing the works to remain in their hands, in addition to paying their dividends?

Witness: Yes; and concurrently with their laying by something to a reserve-fund they might in a short time reduce the price of gas.

Mr. HAWKSLEY: Then supposing they made up their reserve-fund and reduced the price of gas, if untoward circumstances were to happen, for which even the reserve-fund was not sufficient, could they, by resuming the price of 5s., in your opinion, make good any possible accident or contingency?

Witness: The circumstances of the case are such that I cannot conceive of the possibility of their having to resort to the 5s. price again. My belief is they might shortly reduce to 4s. 6d., and I cannot conceive anything in the way of misfortune which would drive them back to 5s.

Mr. HAWKSLEY: Then am I to gather from you that, looking to the financial state and structural condition of this company, in your opinion, they could continue to pay their dividend in perpetuity?

Witness: Certainly; there is no question whatever about it.

The UMPIRE: Their dividends—what do you mean?

Mr. HAWKSLEY: Their present dividends.

Witness: I do not know whether I said anything about back dividends, but I have an account here to show what they are.

Mr. HAWKSLEY: That would be irregular.

Mr. CAWLEY: They have paid up their back dividends?

Witness: Yes; and there is about £171 as the nucleus of a reserve-fund after doing so.

Mr. CAWLEY: I do not know whether that would be handed over.

Mr. HAWKSLEY: In all cases, except where otherwise agreed, the reserve-fund is handed over.

Mr. *Jabez Church*, examined by Mr. MICHAEL.

I am a civil engineer and have had experience in the construction, management, and valuation of gas-works. I have seen the works of the Ryde Gas Company several times, and have made myself acquainted with the details of the undertaking. I have examined the works and accounts of the company. I consider the works are laid out very skilfully, and I do not know, with one or two exceptions, that they could be improved. They are in excellent condition, and are second to none in the kingdom. The site is a very large one, and I do not know that there is a lower level, except of a few inches, in the town, so that the works are most favourably circumstanced for supplying the district. There is land much in excess of the present requirements of the manufactory. The construction of a railway at the side of the works will be a great advantage to the company, though in my valuation I have not taken that into consideration. The company will then be able to obtain coals at a cheaper rate, which will be an advantage *qua* reduction of price in the future, without any diminution of the company's profits. The saving will be perhaps 2d. or 3d. per ton of coal, which in the aggregate will be an important item. I think it is most desirable there should be surplus land attached to the works, looking at the future requirements of the town, because it is always difficult to get land for such purposes. The works might be doubled on the existing ground without any great expense in remodelling existing buildings. There would be no difficulty in doubling the capacity of the present retort-house. There is ample room for increase of gasholders on the spot—the best site. I have had no opportunity of examining the mains in the town, but I judge that they are in excellent repair from the small per centage of leakage. I have seen a plan of the mains, and believe they are fully equal to the present consumption. If necessary to increase them it would not entail additional expense upon the persons taking possession of the works, because of the increased consumption of gas that would follow. With the same establishment charges, the same secretary, manager, &c., double the quantity of gas might be made. The length of the mains is 12 miles, ranging in size from 2 to 8 inches. I have prepared a statement of my valuation of the works. It is on the same principle as that prepared by Mr. Spice. I have taken the principle of multiplying the net profit by 20 years, and the result brought out in that way is the sum of £56,959 13s. I then take the value of the surplus plant—first 22 retorts as set, £484; two-thirds of the cost of the present purifiers, £666. Mr. Spice calculated the surplus at five-eighths, and brought out £600. Then with reference to storeage, I consider it to be necessary to have storeage equal to 80 per cent.—*i.e.*, four-fifths of the largest consumption. I therefore take the surplus gasholder storeage at 72,500 cubic feet, £1812 10s. I take also a proportion of the retort-house for the surplus retorts at £484, and the proportion of purifying-house in the same way, £332. I then add rents of houses, ground-rents, and value of surplus land, £5685. I take these on Mr. Ellis's valuation, making a total of £66,423 3s.

Mr. CAWLEY: For surplus land Mr. Church gives £5685, as against Mr. Spice's £5530; but neither of them gives these figures as his own valuation.

Examination continued: I have put down nothing for depreciation. I consider the charges in the balance-sheet would meet that, and keep the works up in such a condition as would enable the company to earn this profit year by year. I consider that the amount of £152, charged in the accounts for repairing and resetting retorts, is ample to cover the expense under that heading. I also consider £117 ample for wear and tear. In looking over the works, I came to the conclusion that they had been kept in first-rate condition, and that if any more money had been expended it would have been superfluous.

Mr. HAWKSLEY: How many retorts do you estimate are necessary for the present make of gas?

Witness: Thirty-one.

Mr. HAWKSLEY: How long, according to your experience, will a retort last?

Witness: Three years.

Mr. HAWKSLEY: Then it would require a renewal of ten retorts every year—rather more?

Witness: Yes.

Mr. HAWKSLEY: What would be the cost of the retorts resetting, with all their appendages?

Witness: £3 15s. to £4 per retort.

Mr. HAWKSLEY: I mean resetting with everything connected with them?

Witness: Take it at £4. Eleven retorts would be £44.

Mr. HAWKSLEY: Then there would be a little to be done to the ovens?

Witness: Yes, and something to be done to the ironwork. Ten shillings more, I think, would cover that.

Mr. HAWKSLEY: How long would you reckon the ovens to last?

Witness: Twenty years. The furnaces repaired twice a year, and the retorts replaced once in three years.

Mr. HAWKSLEY: How much altogether per annum would have to be spent on a retort to keep it up perpetually—everything connected with the setting, including a proportion—one-twentieth you reckon it—as the cost of the oven?

Witness: I should put it at £12, taking the whole of the expense—ironwork, labour, fire-clay, and everything necessary to keep it in perpetual repair?

Mr. HAWKSLEY: You are making it less, by adding the ovens, than before.

Mr. CAWLEY: He makes it £12 per retort.

Mr. HAWKSLEY: Do you mean that for the three years?

Witness: Every year. The retorts cost £1 for setting—*i.e.*, labour; the retort is £2; the furnace, £1 10s.—*i.e.*, for fire goods; ironwork and furnace bars, £2; and the oven would cost £40 once in 20 years—*i.e.*, £2 per annum, which divided among five retorts would be 8s. each. The total, therefore, of this is £6 18s.

Mr. HAWKSLEY: There are 11 retorts—call it £7 per retort—which amounts to £77.

Witness: There are repairs of retorts in that time.

Mr. HAWKSLEY: Those are charged in the other items.

Witness: I take it, to cover the whole of the repairs it would amount to £12.

Mr. HAWKSLEY: Are not the repairs included in other items?

Witness: No.

Mr. HAWKSLEY: Does not the "manufacturing wages" include the labour for doing these very repairs?

Witness: No; I take it it does not. To the best of my recollection it is charged to wear and tear account.

Mr. HAWKSLEY: If that is so Mr. Spice has been misled.

Mr. MICHAEL: Did you examine the meter account as to the sum charged for restoration and repairs of meters?

Witness: I did.

Mr. MICHAEL: Did you learn what was the total amount of capital expended on meters which are hired out to consumers?

Witness: Between £700 and £800. They actually cost £726.

Mr. MICHAEL: Do you look at £52 14s. 1d. as an adequate sum on the average for keeping the meters in a condition to earn the rental?

Witness: Yes; it amounts to nearly 7½ per cent. of the total cost of the meters. Meter makers are in the habit of making contracts with gas companies on those terms.

Mr. CAWLEY: That does not include the cost of replacing the meters.

Mr. MICHAEL: Looking at the ordinary course of gas companies, and that meters are very seldom removed, there would be a very small per centage necessary to meet that.

Witness: Very small.

Mr. CAWLEY: You do not mean to say that a meter-maker would do what is put here for 5 per cent.?

Witness: I do.

Mr. CAWLEY: Do you mean to say that a meter-maker would undertake to remove the meters each time a tenant leaves a house?

Witness: No. I will explain exactly what I mean. I say that a meter-maker would supply the company with any number of meters required, and on taking the capital cost of those meters, he would keep them in repair and replace them for 5 per cent. What Mr. Cawley refers to is another matter—the removal of meters from one place to another.

Mr. MICHAEL: Would, in your opinion, £16, taken from the £52, be ample to meet what Mr. Cawley means?

Witness: No doubt.

Mr. MICHAEL: Is it not a rare occurrence to remove meters?

Witness: No; gas companies remove meters on a tenant leaving.

Cross-examined by Mr. RICHARDS: I cannot account for the fact that, with regard to the meters, the charge last year was only £52, when in the previous year it was £141 8s. 11d., and the year before that £91 16s. 4d., except in this way—it must be well known to every gentleman at this table that the law relating to meters has undergone great alterations of late years. All meters taken down have had to be reconstructed in order to comply with the Act of Parliament, and that has entailed upon the companies more than the ordinary charge for repairs.

Mr. HAWKSLEY: They have been obliged to have them taken down to be stamped.

Mr. LLOYD: It is an exceptional case.

Mr. HAWKSLEY: By the Sales of Gas Act the thing had to be accomplished before the year 1871, and the companies were put to great expense.

Cross-examination continued: I cannot say whether the additional expenditure in this instance in the two previous years was occasioned by a compliance with Lord Redesdale's Act. The one or two exceptions in which I think the works might be improved relate to the retorts, which I should prefer to have set back to back, so that there would be less radiation of heat. It is not impossible to work all the retorts as they are now set, face to face. The works are well arranged, and produce a very good profit, which is the best test of good works. In summer time I believe the greater portion of the coals obtained by the company are beached. I cannot say from personal knowledge that the coal is landed at a place which will not be benefited by the railway. I did not see Mr. Spice's valuation till a day or two ago. I showed him mine yesterday; they were not compared before. The best test of the sufficiency of the mains is to ascertain the pressure in different parts of the town. I have never heard of any complaints of deficiency of gas in any part of the company's district. At the worst point there appeared to me to be sufficient. I should not be surprised to learn that some gentleman present has had his gas go out continually. If it is a fact I should attribute it to local causes—to some defect in his fittings. If there were a general defect in any of the mains, it would affect the whole of that portion of the town which is supplied through those mains. If I were about to enlarge the retort-house, I should utilize the existing coal-store. There are meter-makers in London who undertake to keep meters in repair for 5 per cent. upon the cost.

Mr. HAWKSLEY: They only do it when they get the whole of the trade of the company.

Mr. RICHARDS: And when they have an opportunity of getting it out of the company in some other form.

Mr. CAWLEY: Can you tell us the makers who do it?

Witness: All the meter-makers.

The UMPIRE: They would not do it unless they supplied the meters.

Mr. LLOYD: No doubt there is an averaging of profits.

Mr. RICHARDS: The "Retorts, resetting and restoring," is less in 1871 than before. The average of the four years is £208, whereas for 1871 it was £152. The "Wear and tear" is lower. The average of the previous four years is £162, whereas for 1871 it was £117. Does it not strike you that it would be right to take these items at the average, and not at the charge for any special year?

Witness: Judging from my experience in the matter, I think 1d. per 1000 cubic feet is sufficient to keep up the wear and tear. I do not believe in averages, because we are not in possession of all the facts. I think the proper way to take it is to take the ordinary cost of such work generally.

Mr. RICHARDS: Does it not strike you as a remarkable fact, that in every one of these items except one the amount credited to them in the last account is lower than in either of the three previous years?

Witness: It is a fact, but how to account for it I do not know; I say that the present year's sums are sufficient to represent the repairs.

Mr. RICHARDS: With regard to depreciation, you do not allow anything at all for it?

Witness: Not in works of this character.

Mr. RICHARDS: Is it not a fact that, however well you may keep up your works, still, as years go on, there is a considerable depreciation?

Witness: Undoubtedly. But I say the amounts expended here, to keep up the works and make good the depreciation, are sufficient to cover that.

Mr. RICHARDS: And the main in the same way?

Witness: We replace them, and the sum allowed per year will fully meet that, and the general wear and tear.

Re-examined by Mr. LLOYD: It is my belief that, independently of what the books show was expended, what is allowed here is a fair estimate of the cost.

Mr. *Alfred Penny*, examined by Mr. MICHAEL.

I am an engineer carrying on business at the Wenlock Iron-Works, City Road. I have had large experience in valuing gas-works, and am familiar with all the details in connexion therewith. I am at present the lessee of large gas-works, and am practically acquainted with all the details of the manufacture. I have visited Ryde frequently, and made myself acquainted with the gas-works there. The works are very good—the site is excellent. I have been all over the town, and have seen nothing but what satisfies me that the lighting is well and efficiently conducted. The only criterion of the state of the mains is that which every gas engineer takes—viz., the amount of unaccounted-for gas—and that being only 13 per cent. at Ryde, perhaps less, satisfies me that the mains are in good condition. In making my estimate of the value of the works, I take the ascertained net profit of last year, £2847 19s. 8d., and multiply it by 20, as the two previous witnesses have done. Those were the figures agreed upon as the basis of these calculations. The amount, therefore, is £56,949 13s. 4d. To this sum must be added the value of the surplus land and houses, as estimated by local surveyors, £5530, and also for surplus plant, machinery, and buildings, in excess of what is required to earn the present rental, £3724, making a total of £66,213 13s. 4d. I believe that to be the value of the works to a purchaser, and that those who buy it will make a good bargain at this price. The increase in the consumption of gas at Ryde will, no doubt, continue year by year. I have observed the items in the accounts for repair and resetting of retorts last year. I think it is not only sufficient, but more than I should have spent myself if I had been lessee of the works. I have looked at the retorts, and they appear to be in good condition. I should say that, in my judgment, the company have spent more upon them than was necessary. They are in such a condition as properly to perform their duty and make the proper quantity of gas per ton of coal. I have looked at the amount expended for wear and tear, and judging from my experience in other works I think a larger sum was expended than was necessary. I have looked at the charge for replacing and restoring meters, which I consider adequate. If the meters were all new, that sum laid out year by year would maintain them. I believe £52 is sufficient for the purpose. A great many of the meters are now, and the sum charged here is quite sufficient to replace old worn-out meters by new ones. I think the sum allowed for depreciation is more than sufficient. Practically, there is no depreciation in these works. I could not go and spend £100 upon them fairly. If extensions were required, I could double the works with the greatest ease; and if an enlargement became necessary, there would be additional profit to meet the expenditure—a larger proportional profit than is now made.

Cross-examined by Mr. CLERK: There may sometimes be circumstances in which it would be proper to allow depreciation, but it is not so in this case. I have not heard of any portion of the company's district being unlighted when the churches are lit up, and I cannot conceive that there should be. The figures of these estimates have been agreed upon after consultation together. It is better for the company to have three purifiers, but as far as area of purifying space is concerned two are sufficient. In my estimate of the surplus plant I have put down 21 retorts at £22 each. I have done that because I have found by experience that that is the cost of the stacks.

Mr. CLERK: The capital raised by shares was £31,750. You do not find that in the works, I suppose?

Witness: I did not suppose I should find it all, because some of it was expended upon obtaining the Act of Parliament, &c.

Mr. CLERK: Could not the works be constructed new, in their present state, for an outlay of about £20,000?

Witness: I do not think they could now, with the great increase in wages during the last six months. I think perhaps £24,000 or £25,000 might do it, exclusive of the cost of land, but including everything else.

Mr. HAWKSLEY: £31,000 includes the cost of the Act of Parliament, the working capital, and a great many things not found in the works.

Re-examined by Mr. MICHAEL: I do not think there is quite so much as two acres of land.

FRIDAY, DEC. 8.

Mr. LLOYD said he wished to correct a mistake into which he fell on the previous day through having been imperfectly instructed, and which subsequent investigation enabled him to set right. It related to the cost of resetting retorts. In looking into the accounts themselves, he found the real state of the case was this—the £152 in the valuations of the witnesses who had been examined as the amount expended last year for "Retorts, repairs and resetting," was not actually expended in that year. In 1869 a large expenditure was made in putting up new beds of retorts on the north side of the house; the total cost was £930, and when that work was completed there was a certain stock of retorts left on hand; but the company did not carry the whole of the expenditure, minus the stock, to the account of revenue in that year, believing it to be an excess which would not occur again. Accordingly they carried over £500 to what might be called a suspense account—or, perhaps, more properly, a stock account—treating it as so much stock in hand. The next year there was still an excess of expenditure beyond that which they placed to stock account, and this had to be added to the former amount, which was again carried forward to the year upon which the estimates now relied upon were based. The actual expenditure last year was only about £15, so that the difference between these two went to the credit of the suspense account, the company considering that in a certain number of years, instead of charging this item to capital, they would be able to pay the whole out of revenue without affecting the dividends of the shareholders. It was right to state these things, whatever the effect might be. Mr. Spice would correct his evidence on this point.

Mr. CLERK objected, because Mr. Spice could not state it of his own knowledge.

Mr. CAWLEY said the explanation did not at all affect the final figures.

The UMPIRE said he understood Mr. Spice to guard himself against any responsibility for these items.

Mr. *Ebenezer Goddard*, examined by Mr. LLOYD.

I am a gas engineer of 30 years standing, and have had the management of gas-works. My works are at Ipswich. I have been there 27 years. I understand the practical working of gas apparatus, and have been engaged myself in the erection of gas-works, and in their enlargement, reconstruction, and improvement; also in the valuation of works and plant. I have been carefully over the works at Ryde. The buildings are very substantial, and the works well arranged in every respect. They are quite equal to the business at present carried on by the company, and are capable of large extension. Everything is in good order, and I do not see much that would require an outlay upon in order to maintain the existing income. The plant itself is constructed on a good principle; the condensing and purifying apparatus are ample, and, indeed, more than sufficient. The gasholders and tanks are very good; they are well constructed and in perfect condition. I have not seen any other site in or near Ryde so well adapted for gas-works. To obtain a site anywhere else would be very costly, and I do not think one equally eligible could be obtained. The construction of the tramway at the side of the works will be a great advantage in getting in the stock of coals. In making my estimate of the value of the undertaking, I proceed on the same basis as the other witnesses, taking the returns of the company as to gas-rental and receipts for residual products. In my judgment, 1d. per 1000 cubic feet of gas would be a fair estimate of the cost of maintaining the retorts in good working condition, including the expense of resetting and repairing. For wear and tear of works, 1d. per 1000 cubic feet of gas would also be ample, so that if 1½d. is allowed for retorts, and 1d. for wear and tear, year by year, that would, in my judgment, be abundant.

Mr. CAWLEY: Does the wear and tear apply to everything, including mains?

Witness: Yes; it would not include meters.

Mr. LLOYD: No; those are distinct.

Mr. HAWKSLEY: Do you include everything within and without the works except retorts?

Witness: Yes.

Mr. LLOYD: That being so, give us your net income and expenditure, and show us how you have dealt with them?

Witness: I take the last year's gas and meter rental, £6089 16s. 7d., and the receipts for residual products, £1051 16s. 7d—making together £7141—and deduct from that the expenditure in the same period, £4293 13s. 6d., leaving a net profit of £2847 19s. 8d., exclusive of the rent from external property. I capitalize this at 20 years purchase, making the sum of £56,959 13s.

Mr. LLOYD: Is that the mode in which of late years gas-works have been valued?

Witness: Yes.

Mr. LLOYD: You have not gone into the question of structural value?

Witness: No; I take the commercial value.

Mr. LLOYD: Twenty years upon the actual net profits?

Witness: Yes.

Mr. CAWLEY: That is when it rests upon Act of Parliament security.

Witness: Yes.

Mr. LLOYD: If besides that there is something beyond to make it more reasonably secure, you would think something more should be added. For instance, supposing they make more than their Act of Parliament allowed them to divide?

Witness: Yes.

Mr. LLOYD: Because then you have a surplus to secure your dividend. In that case you would take 25 years.

Witness: Yes.

Mr. LLOYD: Then there is the surplus retort power. You take 22 retorts in excess at £22 per retort—£484—that includes, of course, the hydraulic mains and ascension-pipes?

Witness: Yes, and the fittings from the foundation to completion. I then add a proportionate surplus in retort and purifying houses, in excess of what is required for the retorts and purifiers in use—£780.

Mr. HAWKSLEY: What do you include in the £22 per retort? I ask that because the foundation of a retort-bed is a very uncertain thing; I have expended £22 upon a foundation alone.

Witness: I include the concrete, the building of the arches, the setting of the retorts and benches, the ascension-pipe and the hydraulic main.

Mr. LLOYD: Now we will take the surplus storeage. You know the contents of the gasholders?

Witness: Yes. The surplus is 79,000 cubic feet which I take at £20 per 1000—£1580. The surplus purifying power I take at £600—*i.e.*, three-fifths. The value of the surplus land and houses, and ground-rents, I have taken from the estimate of the valuers at £5530.

Mr. LLOYD: Did you see anything, looking over the items of expenditure for last year, which could fairly be added to the charges against revenue.

Witness: No; I think these are very fair.

Mr. LLOYD: The consumption of coals for gas made, is that a fair proportion?

Witness: Yes; it shows that they are working well, and that their retorts are doing their duty.

Mr. CAWLEY: What do they make per ton?

Witness: 9500 cubic feet; that is a fair average.

Mr. CAWLEY: Is it Newcastle coal?

Mr. LLOYD: There is some cannel also used. (To witness:) The unaccounted-for gas, 13·7 per cent., is that at all in excess?

Witness: No; it shows the mains are in good condition. I have not examined the mains; I had no opportunity.

Mr. CAWLEY: Your estimate is the same as Mr. Spice's—not literally, but practically?

Witness: Yes, it should be; I went through it with him.

Cross-examined by Mr. CLERK: The advantage of the tramway would be that coal could be brought along it from Brading Harbour. It is brought from there at present by carts. The distance is between four and five miles.

Mr. CLERK: Does the tramway go down to the harbour?

Witness: No.

Mr. GARNETT: There is a railway to the jetty, and that will take the coal down to the tramway.

Cross-examination continued: I do not know what sized vessels can go into Brading Harbour. The tramway is a thing which does not exist at present. I spoke of the proximity of the tramway to the works as being eligible for obtaining a siding. At my works at Ipswich the make of gas is nearly 100 million cubic feet per annum. The cost of coal into storeage averages 14s. 9d. per ton. There is a local charge upon it. It is Newcastle coal. Our price of gas is 3s. 9d. per 1000 cubic feet, with discounts to large consumers from 5 to 10 per cent. We call large consumers those whose accounts are £40; they have a discount of 5 per cent.; £60, 7½ per cent., and above that 10 per cent. I have never gone into an estimate to see what is the cost of maintaining our retorts at Ipswich, nor have I ever estimated what the wear and tear per 1000 feet of gas is. I went through the accounts at Ryde, but not beyond those for 1870-1. I take the purchase of the works at twenty years of the net profits. If there were any surplus of profits beyond the divisible amount, I should be disposed to give a larger number of years purchase.

Mr. LLOYD: That is if you take the capitalization upon the divisible amount.

Mr. CLERK: You would do it whatever the surplus was.

Witness: I should do it as a matter of principle.

Mr. CLERK: But if there was an excess of profit beyond the divisible amount, would not that necessitate a reduction in the price of gas?

Witness: That would depend upon circumstances. There might be power to create a reserve-fund to maintain the dividends under all circumstances, or with a view to meet contingencies, accidents, and various things.

Mr. CLERK: Have you ever been engaged in any case where (I do not say by agreement) upon arbitration more than 20 years purchase has been given for gas-works?

Witness: No.

Mr. CLERK: I see you have so entirely agreed with Mr. Spice as to surplus purifying power, that you merely adopt his figures, without saying how you come to the conclusion.

Witness: I take three-fifths as surplus, five-eighths being now required. We have had divers calculations about the surplus plant, especially with regard to the purifying power. One gentleman said it was one-half, and Mr. Spice put it at two-thirds.

Mr. CAWLEY: The question I asked Mr. Penny came to this, that two purifiers out of the four would be sufficient.

The UMPIRE: Leaving a third in readiness.

Witness: The purifying power is very much above the present requirements of the company.

Mr. CAWLEY: How much do you estimate would be sufficient?

Witness: Two-fifths.

Mr. CLERK: There must be some means of purifying provided beyond what may be essentially necessary at any particular time?

Witness: Yes; for the economizing of the working of the establishment it is always well to have a little in excess of the actual requirements.

Mr. CLERK: But when you are cleaning out the purifiers from time to time, just as occasionally you have retorts which are no longer fit for use, you must have the means of substituting others, so it must be with regard to purifying power?

Witness: Well, not quite so; they are not quite analogous to retorts.

Mr. CLERK: But there must be some purifying power beyond what is actually necessary at any given time to purify the gas made?

Mr. CAWLEY: It is very desirable to have an additional purifier to change upon?

Witness: Yes.

Mr. CAWLEY: I expect Mr. Goddard means that with regard to area the purifiers are so much in excess.

Witness: Yes.

Cross-examination continued: The purifiers are well constructed. The £22 per retort which I have taken for the surplus is the price of building the whole bench from the foundation to the hydraulic main—*i.e.*, £110 for a bench of 5 retorts. I know how the retorts are set at Ryde. On one side they are all in benches of 5's, and on the other side they are all 4's, with the exception of two benches of two retorts in each; there are six 4's and two 2's on the south side, and six benches of 5's on the north side, making 58 retorts in all. I have not made any estimate of what it would cost to construct these works new. For buildings, working plant, and mains, I should think in round numbers it would be about £30,000. I do not think the land could be purchased and works constructed for a sum between £20,000 and £21,000. Having been through the works, and seeing in what a substantial manner they are constructed, I should say, upon a general review, that to build them £30,000 would be required; but this statement is not founded upon any detailed estimate.

Mr. CAWLEY: In this £30,000 how much would belong to mains and how much to works?

Witness: That must entirely depend upon the character of the consumption.

Mr. CAWLEY: Pardon me; what I mean is this. You have certain works here, the cost of which you estimate would be £30,000.

Witness: I merely make a rough estimate in my own mind as to what they would cost.

Mr. CAWLEY: And you can in the same rough way say how much of the £30,000 would be attributable to works and how much to mains. The works are visible, the mains are not.

Witness: I have not been into any calculation so as to be able to give an answer.

Mr. CAWLEY: You say that what you can see *plus* what you cannot see would cost £30,000. Cannot you separate the one from the other?

Witness: Well, I should think the proportion would be about half for the works and half for the mains.

Mr. CLERK: What is the length of the mains?

Mr. CAWLEY: That has been given in evidence.

Mr. CLERK: Perhaps you will tell me what you would put down as a proper expenditure of capital per million feet of gas sold?

Mr. HAWKSLEY: Excuse me for saying that the answer to the question as put will not enlighten you. It is per million feet of capability of being made, because that must involve the question of cost, and not what is actually made. I merely wish to suggest that, because the answer to your question would not enlighten my mind.

Mr. CLERK: No doubt it is so.

Mr. HAWKSLEY: The works might be capable of doing twice what is done.

Mr. CAWLEY: The maximum consumption is, of course, the measure of the works.

Mr. HAWKSLEY: No; the maximum capability.

Mr. CAWLEY: But assuming the works to be properly constructed.

Mr. HAWKSLEY: If they are selling up to the maximum, but if not, as in the present case, where there are 58 retorts, many of them being in excess, I apprehend I should not be enlightened by the answer in that form; because we might have works which are just up to the requirement, and next year an equal work might be added, and the following year we might be called upon to sell before these works had developed any revenue. If so, in order to ascertain the question of cost, we must take them at their ultimate capability, and not as they stood at the time of sale.

Mr. CLERK: It is the question of the capacity not only of one part of the works but of the whole works. You might have spent money upon one portion, say the retorts, which might be capable of making 20 or 30 per cent. more gas than required for present sale, but unless the whole works were equal to that production you could not measure the amount of capital expended by the productiveness of one portion.

Mr. HAWKSLEY: True to some extent, but it would involve this—that supposing the works were mainly equal to a great deal more than the present demand upon them, they would still have to be taken in the way I indicate, and then you would have to make a deduction for that part of the work which is not in excess.

The UMPIRE: Put the question in this way: what would be the cost of erecting works capable of distributing 30 million feet of gas per year?

Mr. CAWLEY: Excluding the mains, because that would depend upon the character of the district. The question is, what are the capabilities of making and distributing from the works in 24 hours?

Mr. HAWKSLEY: Quite so; I entirely agree with you.

Mr. CLERK: Well, then, taking the works by themselves, and looking at them as capable of producing as a maximum 30 millions per annum.

Mr. CAWLEY: Take the maximum per day in the winter. The maximum we have had given to us was 127,000 cubic feet. It would rather facilitate the question if you would say what is the cost of works capable of producing 100,000 cubic feet of gas per day.

The UMPIRE: Exclusive of mains.

Mr. LLOYD: Yes; because that is quite capricious.

Mr. CAWLEY: There must be a main sufficient to take the gas from the works, whatever becomes of it afterwards.

Witness: I should say from £500 to £600 per million.

Mr. CAWLEY: For what time? Per day?

Witness: Yes.

Mr. HAWKSLEY: But you are not answering the question. That is the annual production.

Mr. CAWLEY: I do not mean 36 millions per annum. You say that is the cost for 100,000 cubic feet per day.

Witness: No; I have taken the annual make.

Mr. CAWLEY: But we will get rid of annual make, because that depends upon how many days per year it is used.

Mr. LLOYD: Take it at 100,000 feet per day, and we can easily reckon. If you have not considered the question, do not answer.

Witness: The question comes upon me unexpectedly, and I have not considered it.

Re-examined by Mr. LLOYD: In estimating the value of this property you must take into account the value of the site on which the works stand. If you had to re-erect works in Ryde, it would take a very large amount of money to acquire land for the purpose. This site is very valuable as a site for gas-works, and therefore this must be added to any structural value put upon them. If the other things are in proportion to the surplus retort power, you have a very good measure of the capability of the works. I have never had a case in which a company has earned more than they were permitted by Act of Parliament to divide among their shareholders.

Mr. LLOYD: The cost of mains depends, of course, very much upon circumstances—the character of the soil, the sparseness of population, and so on.

Mr. HAWKSLEY: Allow me to ask, in the interest of time, whether, if we get all this information, we shall be at all the wiser for the purpose of the present inquiry, inasmuch as I apprehend that if the gas were sold next door and produced this profit, it would not signify the least, or whether the mains were 20 miles long. When you are upon commercial value, it can have no influence to know what the length of mains is.

Mr. LLOYD: But it may be that on the other side they are going upon another basis of calculation altogether, and many of the questions put to witness seemed to point to that.

Mr. HAWKSLEY: I thought it was admitted on both sides that commercial value was the basis.

Mr. CLERK: Nothing has been admitted by us, except that the extracts from the books are correct.

Mr. HAWKSLEY: If another basis is to be gone upon it may be relevant.

Mr. LLOYD: I avoid going upon structural value.

Mr. CAWLEY: I only look at what may come when we have to deal with the question of figures.

Mr. *George Garnett*, examined by Mr. MICHAEL.

I am the secretary and manager of the Ryde Gas-Works. The amount of capital raised by the company to the 30th of June last was £27,500; that is the

share capital. At that time there was a mortgage debt of £2000. On the 1st of September we issued new shares to the amount of £4000, making a total of £31,750. Since raising that new capital we have paid off the mortgage, and at the present time there is no incumbrance whatever on the works. The capital account shows that there has been actually expended upon the works £28,890 19s. 2d. The capital is divided into 1500 original shares of £12 10s. each, amounting to £18,750; the remaining £13,000 consists of 1040 new £12 10s. shares fully paid up. The dividend payable on the original shares is 9 per cent., and upon the new shares 7 per cent. The amount required to pay the dividend upon both classes of shares is £2597 10s.—viz., on the original capital £1687 10s., and on the new capital £910.

Mr. CAWLEY: I suppose the difference between the capital raised and the capital expended will be handed over either in stock or money. Supposing the company had raised the whole £50,000 authorized, and had the difference between that and the £30,000 unexpended, are they to put the balance in their pockets?

Mr. HAWKSLEY: First of all they must liquidate their debts. The question is what is left?

Examination continued: The revenue account put in is taken from the books, and is correct as representing the income and expenditure, with certain exceptions. The £152 17s. 6d. for "Retorts, repairing and resetting," as it appears in the account of last year, is not the exact sum expended during that period. There is no other estimate in the account, all the other figures being the sums absolutely expended on each item respectively in the year. The actual amount expended for repairs and resetting of retorts in the year ending June 30, 1871, was £15 13s. 1d. The amount charged in this statement represents a portion of the money which had been expended previously and carried to a suspense account from which year by year we wrote off something. We had reconstructed a portion of the retort-house—the whole of the north stack was altered and enlarged, and no part of that expense was charged to capital. At the beginning of 1868 there was standing to the debit of suspense account for stock in hand £161 16s. 8d. We expended that year in reconstruction of works connected with the retorts £768 14s. 2d., making a total of £930 10s. 10d. There was stock sold amounting to £10 0s. 6d., and there was charged to revenue £377 0s. 10d.—together £387 1s. 4d.—which left a balance standing to the debit of retort suspense account at the beginning of the next year, £543 9s. 6d. In 1869 there was taken into stock on retort account (for goods purchased and wages thereon) £193 5s. 7d. The account then stood at £736 15s. 1d. From this is to be deducted £10 7s. 9d. for goods sold, and £155 10s. 4d. which was charged to revenue—together £165 18s. 1d.—leaving the balance of the suspense account £570 17s. In 1870 there was expended on retort account only £15 13s. 1d., bringing the amount up to £586 10s. 1d. We charged to revenue, as per the statement put in, £152 17s. 6d., leaving the account £433 12s. 7d., less sales and discounts £6 14s. 7d., or £426 18s. If you deduct from that the value of the stock in hand—£76 19s. 10d.—it leaves a balance now standing to the debit of suspense account £349 18s. 10d., and that amount has yet to be provided for out of capital or revenue.

Mr. HAWKSLEY: Am I to understand that you took down the ovens bodily—that you cleared all off and reconstructed everything?

Witness: We not only removed them all, but took out the foundations, and put in a double bed of concrete. We also set up new retorts 9 feet long and 21 inches in diameter, in place of some that were 12 and 15 inches. Our ascension-pipes had been only 3-inch, and we altered them for others which were 6 inches at the mouthpiece, and 5 at the hydraulic main. The hydraulic main itself and everything connected with it was perfectly new.

Mr. HAWKSLEY: It was a reconstruction, and not a repair?

Witness: It was. The sums I have given include all that has been expended on repairs.

Mr. MICHAEL: Supposing you have made any extensions of works, what principle have you adopted in allocating the expense between capital and revenue? Suppose you have taken up a 3-inch main, and replaced it with a 4-inch?

Witness: We have taken the difference in the cost between the 3-inch and the 4-inch, and charged only the value of the increase to capital, the remainder being charged to revenue. We have done the same in the general works of the company. I make a valuation of the 3-inch pipe, and the absolute cost of laying the 4-inch, and the difference between the two is charged to capital.

Mr. MICHAEL: Adopting this principle, how much of the sum now due on suspense account ought to go to capital?

Witness: The matter was gone into at the time, and the directors thought £200, but as yet it has not been so allocated. That is my estimate of the increased value to capital.

Mr. HAWKSLEY: On what principle do you diminish the £349 18s. 2d. by £200?

Mr. LLOYD: Some proportion of that expenditure is fairly chargeable to capital. What I understand from the witness is that a number of retorts are put in which are new apparatus altogether, and with reference to them as well as with reference to the surplus the difference may fairly be charged to capital.

Mr. HAWKSLEY: What I understand is that he has been wiping off annual expenses all along, and that if there is a balance it may go to capital.

The UMPIRE: The fact is that about £350 now stands against the account; the rest is a matter of argument.

Mr. CAWLEY: The object of the examination is to ascertain whether the £152 17s. 6d. charged in that year is a fair average charge.

Mr. LLOYD: That is the whole thing.

Mr. HAWKSLEY: In my judgment the evidence fails on that point. The reconstruction may involve expenditure of capital, but we start here with a mixed account.

Mr. CAWLEY: The evidence of the witnesses they have called has all been based on the assumption that £152 17s. 6d. was a fair annual proper charge to make for repairing and resetting retorts, but the actual fact of the expenditure in the particular year was not found to correspond with that. A witness is now called to prove how the discrepancey arose, and it results in his showing that after charging this sum to last year's revenue account there is a balance of £350.

Examination continued: The sum of £480 16s. 6d. was expended in the year 1869-70 for wear and tear. Of that sum £252 9s. 7d. was charged to revenue, being the cost of the foreman's house and building offices, and there was £3 6s. 11d. for sales, leaving the balance £225. The sums actually expended on meter account were, in 1868, £58 16s. 3d.; in 1869 to £91 16s. 4d.; in 1870 to £114 8s. 11d.; and in 1871 to £52 14s. 1d. During the year 1870 we spent a great deal in putting new meters in the place of old ones; we also made a thorough examination of all our meters, and it is that which accounts for the large expenditure in that year. Our meters are now in perfect condition, and in my opinion £52 14s. 1d. expended annually will be amply sufficient to keep them in a condition to earn the rent. Originally we had wet meters, but we have now almost entirely replaced them with dry. With reference to our mains, we have opened down to them in about twenty different places, and they were found to be all in good condition.. Mr. Stevenson had an opportunity to examine them. By the expense we went to for new meters we have been able to make a saving in the unaccountedfor gas. There was a difference we could not make out, and therefore we examined into the matter.

The UMPIRE: Do you mean to say it has been more favourable to the company?

Mr. LLOYD: There was gas went somewhere, and not paid for.

Mr. CAWLEY: I suppose all this expenditure was gone to in order to carry out the Sales of Gas Act?

Witness: We have had them all stamped, but we are not under the Sales of Gas Act.

Examination continued: The initial pressure at the works is 27-10ths. There is a loss of 2 inches pressure in one place in the town upon a length of 2-inch pipe lying between two 4-inch pipes for a distance of 260 yards. There is no other place where there is such a diminution. The pressure generally throughout the town is good. I have made an estimate of the amount of money, which in my opinion could be well expended in increasing the size of our mains. It is £680. For that expenditure the company would obtain a larger revenue through the increased consumption of gas. There would also be a saving to them, with respect to loss by leakage. I should therefore consider it decidedly economical to expend that money; it would be advantageous whether to the company or the local board. It was in contemplation to make the expenditure. The £680 was for substitution, and for additional mains.

Mr. HAWKSLEY: Would that alteration be made with regard to prospective profits? Supposing you never got another customer, would you be under the necessity of making the alteration?

Witness: Not to that extent?

Mr. HAWKSLEY: Tell us to what extent. How much would you lay out to keep your present customers?

Witness: I should think £500.

Mr. MICHAEL: Would that £500 give you an increased number of customers?

Witness: Yes.

Mr. HAWKSLEY: But suppose you never got another customer, and that your profits remained the same as in 1870-71, how much of this expenditure would go to the account you are speaking of?

Witness: About £400, I should think.

By Mr. MICHAEL: We had taken steps to carry this out when we received the notice to treat. There has been a considerable increase year by year in the revenue of the company, and I am certain that increase will continue. The present condition of the works is good. No repairs which ought to have been done were omitted during this last year to avoid expenditure appearing in the accounts.

Cross-examined by Mr. CLERK: The £2000 which remained of the capital called up this year after paying off the mortgage debt is represented by balance at the bank, and in various other ways.

Mr. CLERK: There are two sets of shares; what was the value of those shares this time last year?

Mr. LLOYD: I must object to that. The question of the value of the company's shares is not revelant to the present inquiry. Whatever the shares might sell for could not affect the question of the value of the undertaking.

Mr. CLERK: With regard to the conduct of the works, it might affect it a great deal.

Mr. HAWKSLEY: The things to be paid for are the land, buildings, plant, gas-holders, &c., and not the shares of the company.

Mr. CAWLEY: It is the value of the undertaking which is represented by the shares.

Mr. HAWKSLEY: But this is not evidence of the value of the property.

Mr. CAWLEY: It may be evidence of the number of years' purchase the property is worth in public estimation.

Mr. LLOYD: Well, I object to the question.

Mr. CLERK: It may affect the question of value in estimating the number of years purchase, as pointing out what was the value prior to notice being given.

Mr. LLOYD: The sale of shares is merely a transaction of which we know nothing. It might be that the vendor sacrificed his property in ignorance.

Mr. MICHAEL: A shareholder might have been in pecuniary difficulties when he sold his shares, and obliged to take any price for them.

Mr. HAWKSLEY: Take the Dundee case, where the award was much below what the shares had been sold at; what on earth had the value of the shares to do with it?

Mr. CLERK: I shall not contend that the commercial value is to be based upon the price which the shares may have borne in the market. At the same time, the value of the shares in the market may have a material bearing on other parts of the case.

Mr. HAWKSLEY: It appears to me not to be evidence of the value of the thing to be sold under the Act of Parliament.

Mr. LLOYD: I object to it on the ground of irrelevancy. We sell the undertaking. If Mr. Clerk says it is material to something that I have to consider hereafter, I yield to it.

The UMPIRE: They have given you notice to produce the books, and it will be found there.

Mr. MICHAEL: No.

Mr. LLOYD: I object on principle to going into the question of what the shares may have been sold for, because if sold at a price beyond their worth we could not base anything upon it.

Mr. HAWKSLEY: Supposing you were valuing my horse under arbitration, it would be no evidence of value what I myself gave for it. I might have got it for nothing.

Mr. CLERK: I do not put it as direct evidence of value, but I was proposing to obtain it as aiding in the result at which the arbitrators have to arrive—as pointing out the number of years purchase the undertaking was considered to be worth at the time the notice to treat was given.

The UMPIRE: In the estimation of persons who chose to sell their shares?

Mr. CLERK: In the estimation of the public.

Mr. HAWKSLEY: No; it is only the value of a share, and not the value of the undertaking.

Mr. RICHARDS: It is the value of it in the minds of those who are best qualified to judge.

Mr. MICHAEL: No; do not say that.

Mr. CLERK: I withdraw it.

Cross-examination continued: The cost of haulage of coal from the beach to the works is 1s. 6d. per ton. All our coal is beached at the present time. The 1s. 6d. per ton does not include the cost of loading and unloading; that is done by our own men; it is merely for the cartage. We pay 16s. 6d. per ton for our coal this year, including everything. We contract with the coal owner to deliver the coal into our stores. The 1s. 6d. per ton for cartage is included as part of our contract. We do not necessarily know that is the charge. There is a weigh-bridge at the works, and we charge 3d. per ton for weighing the coals. That charge of 3d. appears in our accounts. It is a deduction made from the 16s. 6d. by the coal contractor, so that the cost of coal stands in our books at the net price of 16s. 3d. We can bring coal from Brading, but we do not do it. Large quantities of coal are discharged there now. They are taken out of the ships into trucks, the railway running down to the jetty. Coals could be brought from Brading to our works at 1s. 4d. per ton. That is the price which has been named by Mr. Joseph Brown, the railway manager. I do not know at what cost coals are now loaded into trucks at Brading pier. I have for years contemplated obtaining coal from there when the railway was completed. The notice by the corporation to treat for the purchase of our works was given on the 14th of February, 1871. It was answered by us on the 3rd of April. The claim at that time was £61,925 16s. 8d.

Mr. CLERK: Was that the first time you had heard of the intention of the corporation to become the purchasers? What was the first time that any com-

munication was made to you with regard to a proposition on the part of the corporation to purchase the gas-works?

Witness: On the 27th of January last there was a letter written to us by the corporation, asking for a copy of our accounts since the passing of the Act of 1866, under the 76th section.

Cross-examination continued: I am not aware that the matter of the purchase was in contemplation for some time previously. I have no recollection of it being discussed in the council prior to that date. I attended the council meetings, and I mean simply that I do not recollect. I had heard of its being talked of in committee before that. I do not recollect that it had been for some months before considered by the corporation. There was a Special Gas Committee of the local board appointed, but when I do not know. Councillor White did make some motion on the subject, but I do not know at what date. It was about 1868 when we began to reconstruct certain beds of retorts. The reconstruction was principally on the north side of the retort-house. I think there is the same number of beds there now that there was before. We enlarged the retort-house when we went to Parliament in 1866, and put up some new beds of retorts. The whole of the work was an extension. We doubled the width of the retort-house. Prior to that we had 32 or 33 retorts. The 26 subsequently added go to extensions. There were no retorts on the south side prior to 1866. The additional retorts were put in during the autumn of 1865 or the spring of 1866. About 1868 the 32 retorts on the north side were taken down and reconstructed. There is nothing distinctly charged to capital or revenue for this, but the cost has been carried on as a running account from year to year.

Mr. Hawksley: It is perfectly immaterial to me what they have laid out. I have to assess the value of the undertaking. They may have spent their money usefully, or quite the reverse.

Mr. Clerk: For the last four years the average expenditure on wear and tear is £162; for the year in question it was only £117. Can you give us the reason for that?

Witness: In the year preceding we found it necessary not only to reconstruct but to enlarge and add to, by taking down the old foreman's house and building it on a larger plan; also the manager's office; and £252 of the cost of doing that was charged to revenue. The £252 includes the reconstruction so far, as we had to pull down some old cottages and an old office. I cannot tell how much of the £252 was for the foreman's house. In the year before that the expenditure was £146 7s. 2d. There was no special charge in that. We merely did what we do from year to year to maintain our works in first-class condition. In the year 1867-8 the expenditure was £134 12s. That was for ordinary works.

Mr. Clerk: With regard to meters, what do you get at the present time from the rent of meters?

Witness: Our meter-rental account for the year 1870-71 was £171 15s. 6d. The value of the meters at prime cost was £726. We charge for a 2 or 3 light meter, 1s. 6d. per quarter; for a 5-light, 2s. 9d.; for a 10-light, 3s. 6d.; and for a 20-light 5s. We fix the meters without charge to the consumers. When the meter is on hire the service is provided by the company, but in all cases the main cock is provided by the consumer. The main cock is on the inlet of the meter. We sometimes carry the service-pipe into the house at our own expense.

Mr. Clerk: We have it here from your books that the private meter-rental for the year 1870-71 was only £90 7s. 4d.

Witness: No; it was £175 15s. 6d. The quarters were October, 1870, £42 11s. 3d.; Dec., £43 1s. 9d.; March, 1871, £44 12s.; and June, £45 10s. 6d.

Mr. Clerk: The public lighting takes place by contract?

Witness: Yes.

Mr. Clerk: For how many hours do you light?

Witness: No specific number of hours; we do not go upon a certain number of hours. The contract is that the company shall light each of the street-lamps and keep them lighted from sunset to sunrise every night in the year except three nights before, the night of, and the night after the full moon in each month.

Mr. Hawksley: That makes exactly 300 nights a year.

Mr. Clerk: As a matter of fact, how many hours?

Mr. Hawksley: It would be 3600 hours.

Mr. Clerk: As a matter of fact, how many hours are they lighted?

Witness: I make it out that they burn 3600 hours.

Mr. Cawley: That is their contract; if they do not do it, it is the local board's duty to see after them.

Mr. Clerk: This has a great bearing on the question of leakage, or unaccounted-for gas.

Mr. Cawley: Are you going to prove that with your cognizance they have been violating their contract?

Mr. Michael: If so, we shall call for their written complaints.

Mr. Cawley: I do not know the facts, I only see what is involved.

Mr. Clerk: I want to show that it is only for about eleven hours a night that the lamps are lighted. How long a time does it take to light the lamps?

Mr. Michael: That has nothing to do with it.

Witness: It takes a little more than half an hour to light the lamps.

Mr. Clerk: How many lighters does it take to light all the lamps on 12 miles of mains?

Witness: I cannot tell. It is done by contract. My foreman looks out to see it is done properly. I have no record of the number of men employed.

Mr. Lloyd: We rely upon the local board enforcing their contract.

Mr. Richards: They cannot light all the lamps simultaneously.

Mr. Michael: Then they must begin before sunset.

Mr. Clerk: We only want to see whether they have done their duty to us.

Mr. Hawksley: The company get the benefit of the 15 degrees of twilight when the sun sinks below the horizon. On the other hand, the local board get the benefit of the increased consumption. Probably the lamps burn 6 feet an hour instead of 5. You cannot try that question, I am persuaded.

Mr. Clerk: With regard to the mains, you mentioned that it was proposed to expend £680 on the mains. Was there not a proposition to spend about £2000 upon mains?

Witness: There was no such proposition.

Mr. Hawksley: Have you any governors on the lamps?

Witness: Yes.

Mr. Hawksley: To what are they adjusted?

Witness: They are supposed to be adjusted to 5 feet, but do, I believe, give 6. We have not tried one for the last twelve months.

Cross-examination continued: None of them have been tried for the purpose of this inquiry. We have taken off burners with the governor, and tried them by the meter, and found that they consumed more than 5 feet. I do not know how many were tried, nor what per centage of excess they registered. My impression is that all of them registered more than 5 feet. With regard to the mains, there may have been some gossip about spending £2000, but I cannot tell from what quarter it came. From time to time we have had complaints of want of gas, but they have been few. The 2-inch main on which there is a loss of pressure is in St. Thomas's Street. The Queen's Road is on a different line of main. That is a part which is rapidly increasing. I have had complaints of an insufficiency of gas there, but they turned out to be complete myths. Our main there is a 3-inch main. There is a new church now erecting at the end of that road, and there is a small temporary iron church which is lighted with gas. I have never heard complaints that when the gas is lighted in that church the lights in the houses go out. I have heard that it was much diminished, especially in one part. It was reported to me by my foreman, and upon investigating the cause it was found that for some purpose or other, probably for the sake of economy, as the house stands a long way back from the boundary wall in the road, a branch had been carried in from a cast-iron pipe, and a depression having taken place in the cast iron-pipe, aqueous vapour had got into it. As a rule we have a good light there. My intention, according to my estimate, was to lay a 7-inch pipe through that road.

Re-examined by Mr. Michael: One of our directors lives in the Queen's Road, and has the best-lighted house in the town, and one has gone to live many hundred yards beyond that and gets a good light on the same line of main.

Mr. Clerk: On the question of price, have there been any representations made to the company with regard to a reduction in the price of gas?

Witness: I do not know of any for the last five years. Here and there people will say something.

Mr. Michael: Have you had any complaints in writing that the company have failed to fulfil their contract with the local board as to the public lighting?

Witness: No.

Mr. *John W. Ellis*, examined by Mr. Lloyd.

I am a member of the firm of Gadsden and Ellis, valuers, and have had large experience in the valuation of property of all kinds, particularly of houses. My experience has been extensive in the Isle of Wight. In my judgment, land in and immediately about the town of Ryde, available for building purposes, is very valuable. There is a constant demand continually going on for such land. I know Sir John Simeon's estate, which has been let for building purposes; it is now almost covered with houses. The site of the gas-works is immediately contiguous to the town, and in the very centre of the population. I have made a valuation of the surplus land belonging to the company. The annual ground-rents amount to £111 9s. 6d., which I take at 22½ years purchase. No doubt if it were in the market it would be let, and that ground-rent secured by its being built upon immediately. I should allow 2½ years for covering it with houses. That gives a capitalization of £2508. Then we come to the already secured ground-rents on the other side of £50 for the unexpired term of 999 years. I take them at 25 years purchase, £1250, and I add to that 10 per cent., because I think ground-rents like those are much sought for, and are generally bought up at something over 4 per cent.

Mr. Hawksley: That makes 27½ years?

Witness: Yes.

Mr. Hawksley: Have you ever known ground-rents like these in country towns sold at 27½ years?

Witness: I cannot call to mind anything of the sort, but they are much sought after.

Mr. Hawksley: But I want to know whether you have ever known in a country town like Ryde ground-rents sell for 27½ years?

Witness: There is this peculiar circumstance—we seldom come across land et for 999 years.

Mr. Cawley: The £50 is one rent?

Witness: Yes. Now we come to the cottages, actually let at £10 a cottage, but well worth, I have no doubt, £12 each per year. They are now let to quarterly tenants. The landlord pays the taxes. I therefore make a deduction of 25 per cent., which I am satisfied is the full amount required to bring the gross rental into net rental, and I take this net rental at 20 years purchase, or £720. Then there is one cottage let on lease, of which two years are expired, at £21 per annum, but which I value at £30. That is worth £600, less £18 which I take off for the two years which have expired, making the present value £582. Then there is a piece of ground which is suitable either for the purposes of the gas company or for a builder's yard, the area being 1 rood 3 poles. I have valued that at £500, and this brings the total value of the surplus land to £5685 3s. 9d. This is quite irrespective of the site of the works themselves. In my judgment this is a fair valuation.

Mr. Hawksley: Are these rents included in the present income of the company?

Mr. Clerk: They were included, but are excluded from the calculations.

Cross-examined by Mr. Richards: I have not valued much in Ryde itself. I know that the price put upon the frontage in Monckton Street, where the ground-rents are, were 20 years ago represented 4s. a foot; but the value of property there has much increased since then. I propose to put on 1s. a foot in the side road; the frontage is quite as good. It is narrower than Monckton Street, and is not a made road. I have laid out a street at the back of the yellow part on the plan, 20 feet wide. I am not aware that the bye-laws of Ryde would prevent the formation of a street of that width as a private road. If it were made 30 feet wide it would not depreciate the value of the cottages which would be built there.

Mr. Hawksley: Be the value of the land what it may for building purposes, is it not much more valuable for the purpose of the gas-works?

Witness: If the gas company had not got it, and wanted to have it, they would be well out of their difficulty if they paid a couple of thousand pounds for it. It is worth more to them than to any one else.

By Mr. Richards: The 27½ years purchase is quite an exceptional price. I understand this ground-rent of £50 is a lump sum, but I cannot see, if it were broken into four or five, that it would make any difference in the value.

Mr. Richards: There are five different lots—£16, £14, £8, £8, and £4.

Witness: That has increased my idea of value to the owners for sale in the market.

Cross-examination continued: I do not know for how long the cottages have been let at £10 each. I do not know that they are, but think it probable they may be, occupied by people engaged at the gas-works. I do not know what the company paid for them when they were bought, nor how long ago it is since they were purchased. The piece of ground, No. 13, coloured green on the plan, which I valued at £500, I looked at first of all in connexion with these gas-works. There is plenty of room on it for a builder's yard. The price I have put upon it comes out about £2000 an acre. It is rather a high price, but it is in the middle of the town, and very valuable to the gas company. No. 12 on the plan is a cottage let at £21, and I say it ought to be let at £30. I do not arrive at the conclusion that it is underlet by contrasting it with any other house in Ryde. It is let on an agreement for a lease of 21 years, terminable by either party at 7 or 14.

Re-examined by Mr. Lloyd: It is a net rental, and the tenant is under covenant to do all repairs, inside and out.

Mr. *Francis Arnold*, examined by Mr. Michael.

I am a land agent and valuer, and a partner in the firm of Peak and Garner, of Hambledon. We are agents for Winchester College, and a great many estates in the neighbourhood. I am well acquainted with the value of property at Ryde, and am constantly in the habit of dealing with land in the neighbourhood. I let land recently at Binstead, two miles from Ryde, at 5s. per foot frontage, which was not so valuable for building purposes, nor so well adapted as that belonging to the gas company. I have inspected the land which is the subject of this inquiry, and estimate its value at £6041, to which 10 per cent. should be added, making a total of £6645. (Witness gave in detail his valuation of the respective portions.)

Cross-examined by Mr. Clerk: This valuation was made by myself in conjunction with another witness. All that has been dealt with by me is in the way of ground-rent. It is about £70 an acre. I think some portion of the land in question (the site of the Baptist Chapel) let at more than 4s. per foot frontage. I propose, as Mr. Ellis did, that a road should be made along this portion (the north side), and I allow a width of 18 feet for that purpose.

Mr. *Bovill Smith*, examined by Mr. MICHAEL.

I am a land valuer and auctioneer, carrying on business in Portsea. I have inspected and valued this land, and I agree in the valuation of the gentleman who preceded me, and for the reasons which induced him to make it.

Cross-examined by Mr. RICHARDS: I went through the calculations with the last witness, and went over the property with him.

Mr. *John E. Scott*, examined by Mr. MICHAEL.

I am a director of the gas company. I know something of the sale of ground-rents in Ryde for 999 years. I know that they have been sold at 27 years purchase.

Cross-examined by Mr. RICHARDS: The property I refer to was situated in St. John's Park. I am myself an auctioneer and upholsterer. I bought the ground-rent referred to for a client of mine. He was the occupier of the house at the time. I should be very pleased to buy my own at that rate, or at a year or two more.

The UMPIRE: What is the value of the ground-rent you mentioned?

Witness: The house is worth to let about £80 a year. The ground-rent was, I suppose, about £15.

Mr. CAWLEY: Have you ever had ground-rents to sell by auction?

Witness: I do not know that I ever had.

Mr. LLOYD: I suppose there is no doubt about the right of pre-emption. The branch railway being abandoned, it reverts to the adjoining owners.

Mr. CLERK: There is no evidence of it.

Mr. LLOYD: Then, subject to evidence on that point, our case is closed.

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Mr. LLOYD: I have made inquiries about the right of pre-emption to the land. The position of things seems to be that although there was an arrangement for the purchase of that piece of land, it never was conveyed to the railway company. They never paid the price, and the vendor is taking proceedings to enforce it. Therefore I do not propose to give any evidence upon that. All I can say is that it must be excluded from the award, for I must not imperil the result by presuming to sell that to which I have no title.

Mr. *Garnett* recalled, and examined by Mr. CLERK.

I cannot tell off-hand what was paid by our company for the lease of their premises. It was not all comprised in one lease originally. (Witness described in the plan the portions held under each lease.) The whole was obtained before the passing of our Act of Parliament, and is scheduled in that Act. The land was afterwards enfranchised. The cost of the lease (and expenses) from Joliffe's assignees was £1900. We purchased the cottages for £344, which sum included the cost of conveyance. About five years afterwards we purchased the reversion of the whole for £4681, making a total cost of £6925, but this does not include the strip of land between the old works and the railway. I cannot tell what that cost. It was a "give and take" line, and the vendors had to do certain work for us. I will ascertain, and give you the exact figures. With this exception the whole outlay for land is included in the capital expenditure I gave as £28,890.

By Mr. LLOYD: The purchase of the lease from Joliffe's trustees was on Sept. 20 1864. From that time until we purchased the reversion we paid an annual rent of £75 and £50. We purchased the fee simple of the whole property about two years ago, and up to that time we stood at the annual rent of £125. We had the benefit of the ground-rents of the cottages; they were not purchased of Joliffe's trustees.

Mr. CLERK said it now became his duty, and that of his friend Mr. Richards, to present to the umpire and arbitrators their view of the value of this undertaking, and the other property which was not immediately connected with it, but for which the corporation had given notice to purchase, and to show what price ought to be put upon the whole of the property. His learned friend, Mr. Lloyd, called the attention of the court on the first day of the inquiry to the different circumstances under which the Ryde Gas Company was formed into a statutory company, and to the powers which the Ryde Commissioners originally, and now the corporation of Ryde, were said to have by Act of Parliament become possessed of this property. Now he (Mr. Clerk) thought it very important that in commencing this inquiry it should be clearly seen what were the relative positions of the gas company and the corporation. It had been assumed by his learned friend, and stated by him very distinctly, that this was a compulsory proceeding—morally so, at all events—for though, by the Ryde Improvement Act, the commissioners had only power to purchase by agreement, still it was assumed by his learned friend that they had power to establish gas-works themselves, and that the threat of an intention to establish gas-works compelled the gas company to sell their undertaking, and therefore there was a moral compulsion. It was right that he (Mr. Clerk) should at once admit that in their notice of the 14th of February, 1871, when they called upon the gas company to treat with them for the sale of these works, the corporation did state at the conclusion of their communication that if they did not get an answer within a certain space of time—six months—from the service of the notice, the local board would be at liberty to construct buildings, gasholders, and machinery, for the purpose of manufacturing gas, or to contract for and purchase any other gas-works, apparatus, &c., for the manufacture and distribution of gas within the borough. As a matter of fact, there were no other gas-works or apparatus within the borough which they could have purchased, and the only property of this character which they could deal with were the works and apparatus of the Ryde Gas Company. But it was upon the assumption that the commissioners had the power to construct gas-works themselves that there was this supposed compulsion on their part, as against the company, to treat for the purchase of their undertaking. This assumption rested wholly upon the construction put upon the 85th clause of the Ryde Improvement Act, 1854. But there was no power whatever given to the commissioners under that section, and therefore the corporation did not inherit from them any power to construct gas-works. The proviso assumed that a power had been given to the commissioners for the purpose, and enacted that before constructing such works they should give notice to the Ryde Gas Company, and wait six months to see whether they would deal with them or not. But if the court would look at the earlier part of the section, it would be seen that they were only to purchase by agreement from the Ryde Gas Company all the land, buildings, gas-works, gasometers, retorts, mains, and pipes of the said company, and also to contract for and purchase any other gas-works gas apparatus, mains, pipes, and machinery within the town. There was no compulsory power to do this. The only power conferred upon the commissioners by this Act was the power to agree for the purchase of the existing gas-works. There was no power of construction at all. Now the condition attached to the end of the clause was that they should not erect gas-works unless they had given notice to the gas company, and the company for six months had not answered their application. There was nothing compulsory on the company to sell. It was quite open to those gentlemen to say, "We do not propose to sell our gas-works, and you have no power to construct gas-works; for though you say that if within six months we do not give you an answer, you are at liberty to construct works for the purpose of manufacturing gas, you have, in fact, no such power, and we hold you in defiance." They had not taken that view, and whatever the corporation had stated in their notice as to the letter of the law upon the subject, the company had thought fit to treat with them for the purchase of their undertaking. They accordingly offered to sell their property for the sum of £61,925 16s. 8d., which the corporation considered was far too much, and therefore, entirely as a matter of voluntary arrangement, and not in the slightest degree under the provisions of any Act of Parliament, the parties were before the umpire and arbitrators to consider what was really the proper price to be given for these works. It was important thus at first starting to make it quite clear that there was nothing of a compulsory character in the proceedings, because, inasmuch as the corporation had no power to construct gas-works, the company might have laughed at their threats. Both parties were present as willing parties—vendors and purchasers.

The UMPIRE: What is the meaning of the 12th line in the 85th clause?—"It shall not be lawful for the commissioners to construct any gas-works machinery or apparatus——"

Mr. CLERK: Unless the company refuse to sell.

The UMPIRE: Then if they had refused, it would have been lawful.

Mr. CLERK: But power cannot be given by implication.

The UMPIRE: The company have claimed nothing for compulsory sale.

Mr. LLOYD: But no doubt, taking the words of the clause, this is an express power. It says, "You shall not do it unless you do certain things first;" which means, "If you do certain things, you may do it."

Mr. CLERK said he only wished to draw the attention of the court to this in the first instance. The important questions now to be considered were two. One was, what was the real maintainable annual profit to be derived from this concern; and the second—as affecting the value of the gas-works apart from the land—how many years purchase of the profits of these particular works ought, under the circumstances, to be paid for by the purchaser. On the part of the claimants, statements had been put in with regard to the income and expenditure of the company for the year ending June, 1871, and a good deal was said by his learned friend, in opening the case, with regard to the position of the buildings. Now, on the part of the corporation, he (Mr. Clerk) was not going to raise any question as to the position of the buildings not being good. His learned friend wished to add something to the value by reason of the proximity of the railway and the supposed facility for getting coals, &c. He (Mr. Clerk) did not think it necessary to trouble the court upon that point, for it was pretty clear that the cost of bringing coals along the tramway would be higher than the present cost of obtaining them. The question which came up for consideration first of all was whether the statement of income given in by the claimants was the proper amount—*i.e.*, whether the price of gas on which it was based—5s. per 1000 cubic feet—was a maintainable price; and, secondly, whether the expenditure for the past year was a fair test of what the expenditure to earn that income would be. With regard to the expenditure, that was a matter upon which those who represented the corporation would go very fully into evidence, and therefore he did not propose to deal with the question much in detail in his opening address not desiring to waste time by having the figures taken down twice. But the court would recollect this, that on almost every item of expenditure, the cost of retorts, the wear and tear, the expense of meters, the claimants had thought fit to select the last year. They had not thought fit to do that which he apprehended was almost usually the case—to take an average of a certain number of years, so as to see what was the probable continuing amount of expenditure upon these items. His learned friend stated that they took the expenditure of the last year because the business was increasing.

Mr. CAWLEY: Because the income was increasing, not the expenditure.

Mr. LLOYD: I said we had a right to take the last year inasmuch as we are not fluctuating but increasing.

Mr. HAWKSLEY: I took it to be so.

Mr. CLERK: I took down my friend's words, "I take the last year's net results, because the business is increasing."

Mr. LLOYD: I said because the income was not fluctuating, but increasing.

Mr. CLERK said it was admitted by Mr. Spice that generally in the ratio of the increase of the manufacture of gas, so the wear and tear would increase. Now it certainly was a little extraordinary to find that in these three important items they should in their accounts show in this particular year a considerably smaller amount than the real average. Mr. Spice stated that if the expenditure for the year had been larger, he would have made a deduction. Why? Presumably because it would not then have represented fairly and truly what might be expected to be the expenditure from year to year. But then, upon the same ground, if the expenditure was found to be smaller in this particular year than usual, it would be fair and proper to take an average of the three or four preceding years, supposing the figures could be obtained. The accounts in the present instance had been kept in a regular form since 1867, and taking the average of these four years the expenditure on retorts, instead of being £152 17s. 6d., should be £208. Mr. Garnett on the previous day gave some explanations as to what had been done in the years previous to 1870, but he (Mr. Clerk) found it difficult to understand how much of the expense incurred was really chargeable to capital and how much to revenue. There had been a stock account kept, but upon what principle kept it was not easy to understand. On the other hand it was stated by Mr. Church on the first day that, assuming the life of a retort to be three years, it would cost to restore £12 per annum. Now there were 36 retorts in use, and therefore there would be 12 retorts to replace annually, so that the actual annual cost for replacement would amount to £144, independent of the cost of repairs and other incidental expenses.

Mr. MICHAEL: Mr. Church included the whole of the expense of repairs and resetting in the £12—*i.e.*, taking one-third of the whole number each year. Because Mr. Hawksley put it in a particular way. He said: "You say the life of a retort is three years. How much altogether per annum would have to be spent on a retort to keep it up perpetually—everything connected with the setting, including a proportion—1-20th, if you reckon it so—of the cost of the oven?" And the witness said: "I should put that at £12, taking the whole of the expense, ironwork and labour, and fire-clay, and everything necessary to keep it in perpetual repair."

Mr. CLERK: That cannot be, because with the same gentleman, when we come to see what is the price he puts down for surplus retorts, he charges £22 per retort.

Mr. MICHAEL: That is a totally different matter.

Mr. HAWKSLEY: I think I can set the matter right. Mr. Church conveyed to my mind, and I think it is consistent with the fact, that every retort would in three years necessitate an expenditure of £12 upon it; that, of course, would amount to £4 per year. Then you would have to take that £4 per year upon the maximum number of retorts employed at the present time. Or you might put it in another way—take one-third of that number and multiply it by 12; they both come to very nearly the same in the result—viz., £144 per annum.

Mr. CAWLEY: £12 was first given, and then £11. I think he also said there might be some very small repairs upon the 24 retorts.

Mr. HAWKSLEY: At all events it came to this, that one-third of the number of the retorts being taken as being destroyed of the 36 or 32, those might be taken at £12 each; or you might take the whole at £4 each.

Mr. MICHAEL: The £22 per retort which the witnesses gave as the value of the surplus retorts means a totally different thing. There is not only the retort and setting, but also the ascension-pipe, and a share of the hydraulic main—everything, in fact, which is not renewed every three years.

Mr. CLERK: My observation was, that he said £12 included everything, from the bottom upwards.

Mr. MICHAEL: Everything in repairs.

Mr. HAWKSLEY: The £12 was the three years maintenance, the £22 was for the original construction, and had nothing to do with maintenance.

Mr. LLOYD: And includes the ascension-pipes, hydraulic main, &c.

Mr. CLERK: In order to support our view, we had it from Mr. Spice and Mr. Goddard that 1d. per 1000 cubic feet of gas made was a good mode of estimating the cost of retorts, and 1½d. the general repairs.

Mr. MICHAEL: It is exactly the opposite.

Mr. LLOYD: One said 1d., and the other 1½d.

Mr. HAWKSLEY: One comes to £125, and the other to £167.

Mr. CLERK: When we come to see the experience upon which it is based, we find that Mr. Goddard, at Ipswich, had never made such a calculation with reference to his own works; and when I compare Mr. Spice's estimate of 1d. with the actual state of things at Ryde, I find that upon an average of years it has cost them more than 2d.; therefore it is no argument to say it may be done for 1d. As a matter of fact, it is not done, and never has been done at that price at Ryde. To take 1d. per 1000 feet for one year, in justifying the accounts for one year which is not consistent with the average of a number of years, because it is done at a certain place, would be a very unfair way of estimating the annual expense on that item.

Mr. HAWKSLEY: But have not we to do with what might be the reasonable facts? I will assume that a company had been very badly managed, and that they had expended something like 6d. per 1000 cubic feet upon the retorts. As far as my judgment goes, that would have nothing to do with the question, because I should correct that, and say, though the company has been managed badly for four or five years, they could manage better next year.

Mr. CLERK: I do not say there has been any bad management.

Mr. HAWKSLEY: No, nor do I; but I say the gas company at Ryde can manage, and presumably they do manage, as well as other companies, and if they do not do so it is only a temporary misfortune.

Mr. CAWLEY: The question is what they have spent and what is reasonably sufficient?

Mr. HAWKSLEY: In some cases I have known for two or three years a company put in no retorts at all. In such a case I should add to the expenditure the proper sum of money which ought to be spent on retorts if they had conducted their business in a reasonable way.

Mr. CLERK: We had it here that these new retorts were erected in 1868 at a considerable expense, and therefore it was that the expenses for the next three years were small.

Mr. LLOYD: We only spent £15 last year, and we have given £152 as the expenditure.

Mr. CLERK: £15, according to their accounts, was the whole expenditure in the year 1870-71. Can that be a reasonable amount of expenditure on this head? Does it not show that there has been a large expenditure in some previous years which has prevented the necessity for a large outlay last year? Therefore I say the only reasonable way is to take an average of four years. Supposing when we come into possession of the works we find it necessary to make a considerable addition, what should we do? We should, it is true, pay the cost in one year, but we should spread its repayment over several years. On the general repairs—the wear and tear—the average for the four last years would be £162, but all that is charged in this statement is £117. I understood from Mr. Garnett, yesterday, that the expenditure in 1869-70 was large because something was done to the foreman's house. But I find that the amount of that is already charged to capital and not to revenue, and, therefore, again I say the only fair way is to take the estimate of the four years. We shall go into details upon that to show what the expenditure should be. We have taken an average of the four years of the wear and tear on the buildings and machinery, retorts, mains, services, and meters, and the result of all is to bring out according to our calculations an expenditure of £4736 4s. 9d., as against the calculation of the claimants, which you already have, of £4293 13s. 6d. Now, one of the next important questions to be considered is whether the price of 5s. per 1000 cubic feet charged at the present time at Ryde for gas could be maintained as the price at which it could be sold in the future. When we look at the price at which gas is sold in similar towns on the south coast, where the price of coal is similar, and where the amount of consumption is much the same, we contend that 5s. is not a maintainable price, and that the price at which the gas should be calculated to be sold at is 4s. 6d. per 1000. We shall give you a number of towns with similar populations where the price of gas is less than that at Ryde. There is Folkestone, with a population of 12,700——

Mr. LLOYD: I shall object to my friend going into this, because it is nothing to us what the price of gas is in other towns. We have our Act of Parliament.

Mr. CLERK: But 5s. is your maximum.

Mr. LLOYD: We can charge it, and we do charge it, and what is to prevent us until we get beyond our dividend and have filled up our reserve-fund? Then we shall be obliged to reduce, by order of the Court of Quarter Session, until we get below our maximum dividend again. As long as we are not beyond it we intend to charge 5s., and you cannot prevent us.

Mr. CLERK: We shall hope to show the arbitrators that this price is kept up at 5s., not to pay the dividend upon capital expended on works, but to pay dividend on capital expended upon villas and lands, which have nothing to do with productive results.

Mr. HAWKSLEY: But are not those things held under the Act of Parliament? If they are held as part of the undertaking, no matter for what purpose they are held, I apprehend we cannot exclude them.

Mr. LLOYD: They are scheduled in the Act.

Mr. CLERK: No doubt they are scheduled in the Act.

Mr. HAWKSLEY: If so, they are a part of the undertaking, and if the 5s. price for gas is necessary to sustain any proper outlay upon those villas, I apprehend not a word can be said against it. All parties in Ryde had the opportunity of representing their case when the company were before Parliament, but Parliament has given the company the power to charge 5s. for the purpose of sustaining the dividend and the undertaking, the whole thing, and I apprehend they cannot now be separated into parts. Parliament has married the whole thing together, and we cannot dissolve the marriage.

Mr. CLERK: Be it so that they have the power of so sweating their capital, because Parliament gave them power to take all that land. But that which they transfer to us as purchasers is a different thing.

Mr. HAWKSLEY: But you take the whole thing for better or for worse; and the test, I apprehend, is this—suppose you had to take this company to the justices, in order to obtain a reduction in the price of gas, could you separate these different portions of the undertaking, and say they ought to expend only so much upon one part and so much upon the other; and that, inasmuch as upon one part they have expended money improvidently in your view of the case, and for that which is not necessary to the manufacture of gas, therefore you can claim a reduction of price? Would not the justices say, "It may have been very imprudent for Parliament to give them the power to expend capital on these things, yet, as they have the power, and these things are held as part of the same undertaking, the marriage is indissoluble"? What are you to do then?

Mr. CLERK: We could not have gone to the justices and required a reduction in the price of gas till there was a reserve-fund equal to 1-10th of the capital, and their capital granted in 1866 traverses not only the gas-works, but the whole property.

Mr. HAWKSLEY: Then *cadet quæstio?*

Mr. CAWLEY: It is quite possible that the property might have paid a dividend; if so, it would not be important.

Mr. CLERK: But the more important question is, when we are dealing with the whole account for the purpose of capitalization, if that covers the whole amount charged upon this land, how we can give a price which will pay the dividend of 9 and 7 per cent., and add to that the improved value of the land.

Mr. HAWKSLEY: But at the present moment we are upon the question of the possibility of maintaining the price of 5s. for gas, and we are not at all dealing with the other question.

Mr. CAWLEY: You ask us to give twenty years upon more than your dividend upon your gross profits.

Mr. LLOYD: Not dividing the property from the gas.

Mr. CAWLEY: That raises another point; it is more than you are entitled to divide.

Mr. HAWKSLEY: And that raises another question.

Mr. CAWLEY: The dividend to which you are entitled is a dividend upon your capital raised, whether any of it has been improvidently charged or not. That capital so raised has been raised partly to pay for this very land, and, therefore, the dividend upon that which is to be capitalized and justified covers that. But, in addition, you ask for an improved value in the land which you hold, over and above the capitalization of your income.

Mr. HAWKSLEY: That is a different question to the question upon which we now are.

Mr. CLERK: It is one of the points to which I was going to draw attention. But the point I am now upon is this, that the gross income from gas, *plus* the residuals, can not be maintained, and that the gas could be and ought to be made and sold at a profit at a less sum than 5s.—viz., 4s. 6d. And I am prepared and I propose to show it to you in this way. The evidence which Mr. Garnett gave me to-day helps me materially to this result—that, taking the cost of these works, not only as we estimate them in detail as to their structural value, but taking the outlay upon them as Mr. Garnett has given it, and allowing the 9 per cent. upon the original capital of £18,750, and 7 per cent. upon the balance necessary to make up that sum (as we calculate it, £20,000, or even as Mr. Garnett gave it me this morning), I say we will show you that the ascertained expenses of manufacture could be paid, and also a dividend upon the two sums out of a 4s. 6d. rate for gas.

Mr. HAWKSLEY: But then they could never make up the reserve-fund to which they are entitled.

Mr. CLERK: I should have a balance over.

Mr. HAWKSLEY: You have not shown us how you do it.

Mr. CLERK: I am not troubling you with figures, but telling you generally what will be given in detail. I shall show you what is the cost of manufacture, and how I should have a surplus over, at a 4s. 6d. price, for the purpose of a reserve-fund. With this object, it was very important to get that evidence from Mr. Garnett, who told us what the cost of purchasing the land was. We heard, as you recollect, from Mr. Penny, the other day, that these works could be constructed for about £23,000—that was his estimate.

Mr. LLOYD: It was not an estimate—he withdrew it altogether—it was a mere guess.

Mr. CLERK: It was not, and we have gone into minute detail, and know they could be constructed for much less. The sum of £28,890 is that which has been expended out of capital; £1900 was paid for the lease from Joliffe's trustees, £4680 was paid for the enfranchisement of the whole, and a sum of £344 was paid for the cottages—making a total of £6925. There is a portion of this land which must be taken to apply to the gas-works, which we have estimated at £1620, and shall prove that to be the proper price for it. There has, therefore, been expended upon that portion of the company's property which has nothing to do with the gas-works, £5305, which, deducted from the £28,890, leaves the sum of £23,585 as the whole amount actually expended upon the construction of these works from first to last, and also upon the land on which they stand. We have gone very minutely into a calculation of what the works could have been constructed for in their present position, and we shall show you that, at the price at which they could be constructed, gas could be sold at 4s. 6d., with a profit sufficient to pay 9 per cent. and 7 per cent. dividends respectively upon the capital so employed, leaving a surplus balance for contingencies.

Mr. HAWKSLEY: Do not let me interrupt you, but you know this is a recent Act of the year 1866, and Parliament accepted the capital of the company on the 11th of June in that year at £15,000, in shares, and certain other sums besides, amounting to £3750, and they ordered that shares to that amount should be divided among the existing shareholders. Now, we cannot reform an Act of Parliament on the suggestion that the works could be constructed for less. We must take it that this was the amount of the capital up to that time at all events. Then there are various sums of money which have been expended since, which have to be added. We cannot reform the contract which Parliament has made between the company and the public, but you are really seeking to do that.

Mr. CLERK: I am only seeking to show at what price we ought to sell gas, supposing we become possessed of the works.

Mr. HAWKSLEY: On an assumption which is contrary to the Act of Parliament, because you are revaluing that which Parliament accepted as the value.

Mr. CLERK: Then do I understand we are to take as the basis of capital that which is stated to be the capital in the Act of Parliament?

Mr. HAWKSLEY: We cannot help ourselves. My view is that we are debarred from doing it.

Mr. CLERK: The amount of capital expended under the Act of Parliament is no guide.

Mr. HAWKSLEY: It is no guide; but Parliament has accepted it as part of the contract between the company and the public on that footing.

Mr. CAWLEY: But supposing the company remains as it was——

Mr. CLERK: I only wish to put you in possession of our views on the subject. We make out that the maintainable net profits of this concern are £1810 2s. 5d. And I may just incidentally call to your recollection what was stated by my friend Mr. Lloyd, that there was such a good market for coke at Ryde that never an ounce was to be found in the stores of the company—that they got a most excellent price for it, which is a strong argument for a reduction in the price of gas. Now then comes the question of the number of years purchase. My learned friend, Mr. Lloyd, said, "This is a statutory company," and, therefore, he put it as an agreed thing that, under such circumstances, the Ryde Gas Company are entitled to 20 years purchase. Now, there are two main lines of argument which I suggest to you why you should not apply the principle of 20 years purchase to this undertaking. It is quite true that this company have an Act of Parliament, but their works were established, as you have already heard, at a time when they had no statutory powers, and they were in existence as such when the Ryde Improvement Act of 1854 was passed, which, whether you agree with me or not as to the right of constructing gas-works being conferred upon us, at all events gave us the right to purchase gas-works or to agree with any one to construct them. In the year 1866 this gas company obtained their Act, and by the 77th section of that Act the power on our part was distinctly recognized when statutory authority was conferred upon the company, the only limitation on our power being that it must be exercised within five years. Well, then, what was the condition of the Ryde Gas Company? They had no complete statutory authority; it was one which was defeasible at any time within five years, on our giving notice of our desire to take these works, and of our intention to agree with them, whether we had power to construct or not. But, taking Mr. Lloyd's view, that we had, under the 85th clause of our Act, a power to construct works, then they certainly had no absolute parliamentary authority until the expiration of five years.

Mr. LLOYD: There is no five years in the Improvement Act, at all events.

Mr. CAWLEY: But the 77th clause of the company's Act is, "Nothing in this Act contained shall prejudice or alter the operation or effect of section 85 of the Ryde Improvement Act, 1854, provided that the powers of the commissioners under that Act with reference to purchasing the gas-works shall be acted upon within five years from the passing of this Act."

Mr. CLERK: I said that the Act of 1866 did not in the slightest degree limit the powers given under the Act of 1854, except that they must be exercised

within a period of five years, and, therefore, until the expiration of five years the Ryde Gas Company had no full statutory powers. Why is it that the principle of twenty years purchase is adopted? Is it not because of the firmly established position of the company? It is confirmed by the Act, and it cannot be weakened by anything else. It has a clear parliamentary authority for an existence of its own. But is that the case here? The Ryde Commissioners, according to this Act, might, at any time within the period of five years, say "We intend to take your works from you."

Mr. HAWKSLEY: Do you say that the Act was suspended for five years?

Mr. CLERK: I said it was defeasible, because the corporation might compel them to tranfer their powers to them.

Mr. HAWKSLEY: That is not defeasance.

Mr. CLERK: It is a defeasance of their power.

Mr. CAWLEY: This surely is the real point, whether the Act of 1866, as between the corporation and the company, is to confer an additional value upon these works which they had not before.

Mr. HAWKSLEY: The words are, "the existing gas-works." You will find those words in the Act of 1854. Now, if "existing" meant existing then, you have no power to purchase at all, because the present works are not the works existing in 1854. If, on the contrary, it means existing at the time when you gave us notice, then they exist with their statutory powers. I have myself, without communicating with anybody, studied the effect of these clauses; whether I am right or wrong in the conclusion I have come to will be found hereafter, but I am familiar with the word "existing."

Mr. LLOYD: It must be "existing" at the time of giving the notice.

Mr. CLERK: I say, therefore, that at the expiration of the year 1871 the company were entirely in a different position to what they were in the year 1870. After the year 1871, if no notice had been given them, they would have had these works absolutely without a chance of interference; but up to that time they might be called upon to sell, and were not in the position of a gas company under ordinary circumstances when we came forward to treat. Then the next question is, whether you would be right in dealing on the principle of a twenty years purchase with a concern, a very large part of the capital of which has been expended not on gas-works, but upon a Baptist chapel, villas, and other things besides.

Mr. CAWLEY: Not a chapel, but the land upon which it stands. They hold the ground-rent and the reversion, but not the building.

Mr. HAWKSLEY: The company get the benefit of the £50. They may have paid a larger sum than the £50 will reasonably represent, but they get the benefit of the ground-rent.

Mr. CLERK: Now, sir, the basis of the calculation in this case is the profit which is derived from the expenditure of the capital, not only upon the gas-works, but upon all these other things. It is not like a case in which the profits are derived from gas-works alone, having statutory powers, and which you would take at 20 years purchase, because, as I say, the capital has been expended upon other things beyond the gas-works, and the profits derived by the company are expended to pay dividends, not only upon the capital raised for the purposes of the gas undertaking, but which has been raised for many other purposes. Upon this ground also I submit to you that it ought to be taken at 16¾ years purchase, and not at the ordinary price of 20 years. I may say generally, in passing, that we shall give you a very different valuation with regard to the price of the land to be taken than that given on behalf of the claimants. With reference to the ground-rents, there is very little difference between us. We shall take them at £50 per annum, at 25 years purchase, and we shall give you our opinion as to the value of these houses, which we shall show are not in a good state of repair. We shall also show you what we believe is the real value of that part of the land upon which the works are erected, and of the surplus land which is available for building purposes. With regard to the latter, we shall show that a road could not be constructed of the width proposed, and that the value, therefore, of this part of the property is very different to the estimate of their valuers. Now one word with regard to our view as to the value of the surplus plant. Supposing that anything at all should be paid for surplus plant, I think we shall show you that the value has been very much exaggerated. But we contend, that, considering the state of the mains throughout the town of Ryde, a very large proportion, about one-third, consisting of 2-inch pipes only, and that generally they are all of a very small capacity indeed, so that a considerable expenditure must take place in relaying almost the whole distributory apparatus—I say that whatever sum the surplus plant might come to is fully compensated for by the amount necessary to be expended in improving the distribution. But is it right in this case to make any charge whatever for surplus plant? Supposing you take the profits realized by the company, and capitalize them at either 20 or 16¾ years, is not the surplus plant already paid for? You recollect that the dividend which is now paid to the shareholders is paid upon the whole capital expended. That capital covers not only the gas-works, but also the whole of the surplus plant within the gas-works. The dividend is paid upon the whole cost of construction. The price of gas has been kept up to the high price it is, in order to cover the interest upon the whole capital—not only the capital expended in the gas-works themselves, but upon the extensions of property beyond. Under these circumstances, therefore, the profits which have been made are unnecessarily and unduly large as applied to the gas-works, and when you come to consider what should be given for surplus plant, I say it has been already paid for, and is being paid for now by reason of the company keeping up such a high dividend upon the large expenditure of capital. It will be one part of our contention that no surplus plant should be allowed for at all, unless the dividends were reduced in proportion.

Mr. HAWKSLEY: They cannot be paid twice over.

Mr. CLERK: That is our argument.

Mr. HAWKSLEY: There may be some principle in it, for they cannot be paid twice over. But there is more than that in it, because a work which is backed up by great capabilities is, of course, worth more in a number of years purchase than if it were not. It may be that this company have presented their statement and evidence in a way which is not maintainable as a matter of form, but it may be also that it will come to nearly the same thing. Supposing, instead of taking twenty years purchase, they had taken that higher number of years purchase, which might have been reasonable, considering how the dividends of the company may be securable on account of these advantages.

Mr. LLOYD: It has nothing on earth to do with dividends, because if we capitalized upon dividend we should get a much larger sum upon our shares.

Mr. CAWLEY: You are asking to capitalize upon an income which is in excess. Supposing that instead of the works, which cost £10,000, cost altogether, say £20,000 for works and floating capital, and that this was a *bonâ fide* expenditure; and supposing the company, paying a dividend upon this outlay, were to choose to double their works and expend another £10,000, which they had power to raise and to call it "surplus," and to pay a dividend on the £30,000 instead of £20,000, the income enabling them to pay the maximum, would you say that they ought to be paid the number of years purchase upon the maximum dividend, and then £10,000 for "surplus"?

Mr. LLOYD: Certainly.

Mr. CLERK: I think I have now exhausted all my points, the result being that, according to our view, there is a considerable reduction to be made from the £61,925.

Mr. LLOYD: It was £61,925, but we are not bound by that now. If you had taken us at that time upon our claim it would have been right.

Mr. CLERK: Well, from whatever the amount is; but it is clear that the period to calculate from is the date when the company accepted our proposition to treat.

Mr. LLOYD: No; I differ altogether with you. You should have taken us then.

Mr. HAWKSLEY (to Mr. Clerk): You have never told us, as I understand, what is the total sum you rely upon. You spoke about £23,000 odd, but whether that is your total sum I do not know.

Mr. CLERK: I mentioned that as the sum at which Mr. Penny said the works could be constructed, and I showed that £23,000 was the sum brought out as actually expended upon the works, deducting what was paid for the lease and the enfranchisement.

Mr. HAWKSLEY: But you have not stated what you intend to rely upon as the claim—what, in fact, would have been your offer if you had made one.

Mr. CLERK: I will tell you. We take £1810 as the net income of the company, and capitalize that at 16¾ years purchase, which brings out £30,167. To that must be added the cost of the land.

The proceedings were then adjourned until the 20th of December.

Miscellaneous News.

SOUTH METROPOLITAN GASLIGHT AND COKE COMPANY.

A Special Meeting of the Proprietors of this Company was held at the London Tavern, on Tuesday, Dec. 19, 1871.—THOMAS BRIDGE SIMPSON, Esq., in the chair—"to take into consideration the amalgamation of this company with the Phœnix and Surrey Consumers Companies."

The SECRETARY (Mr. G. Livesey) having read the advertisement convening the meeting, the following report of the directors was presented:—

Your directors have invited you to meet them to submit for your approval the terms on which it is proposed that the sanction of Parliament should be applied for to an amalgamation of your company with the Phœnix Gas Company, under the title of the "South Metropolitan Gas Company," with permissive power to unite with any other metropolitan gas company south of the Thames, on terms to be hereafter agreed on.

The circumstances which have led to this are as follows:—In 1867 a select committee of the House of Commons, presided over by Mr. Cardwell, inquired into the gas supply of the metropolis, and passed, among others, the following resolution:—

"That the settlement must provide for the improved administration of the system by reduced expenditure, and the committee think that by the amalgamation of some of the companies and improved arrangements of the districts that object may be easily attained."

The Board of Trade, the Corporation of London, and the Metropolitan Board of Works, having since repeatedly urged the necessity of acting upon the report of the select committee, an amalgamation was effected in 1868 between the three companies supplying the City of London and other parts of London north of the Thames—viz., the Chartered, the City, and the Great Central, the two former being united on equal terms, and the Great Central obtaining a preference dividend of 10 per cent. on its paid-up capital. In the present year the Equitable Company has been amalgamated with the united City companies on the same terms as the Great Central.

In 1869 your company obtained power to raise an additional capital of £250,000, with a maximum dividend of 10 per cent., another metropolitan company being in the same session limited to 7½ per cent. on their new capital.

Proposals of amalgamation have at various times been made to your company both by the Phœnix and Surrey Consumers Companies, but hitherto without effect, the terms offered not being such as your directors thought they were fairly entitled to.

The result of negotiations in the present year was an offer on the part of the Phœnix and Surrey Consumers Companies to this company of a preferential dividend of 10 per cent. on four-fifths of the authorized capital of this company, the remaining one-fifth to rank with the Phœnix and Surrey Consumers Companies ordinary 10 per cent. capital.

Having consulted the shareholders of this company as to the expediency of furthering amalgamation upon this basis, your directors have concurred in giving notice of application to Parliament in the next session for a bill to carry the proposed measure into effect subject to your approval, and the draft of a bill has been accordingly prepared and considered by the respective companies during the past week, but in consequence of differences of opinion on points of detail, the Surrey Consumers Company have withdrawn from the negotiation, and the result has been the deposit of a bill to provide for the union of the Phœnix and South Metropolitan Companies on the same basis as to preferential dividend. The bill, however, contains permissive powers for amalgamation with other companies in South London, and your directors are not without hope that the Surrey Consumers Company will, at no distant date, avail themselves of the facilities thereby afforded with a view to carry into effect the policy recommended by the select committee of the House of Commons.

The favourable reception which these proposals have already met with from the shareholders of the South Metropolitan Gas Company encourages your directors to hope that the present meeting will give its formal sanction to the necessary steps being taken to obtain powers from Parliament in the ensuing session to give effect to the proposed measure as an important step towards improving the conditions of the gas supply in South London, in the interest both of the consumers and the shareholders.

The CHAIRMAN: Gentlemen, at our last meeting (a private meeting held on the 11th inst.) we obtained permission from you to proceed with the matter of the proposed amalgamation, and we have done so in the form of a bill, which I trust will be satisfactory to all parties. Your directors met on the following day, but the bill itself has not been in our hands until this morning, so that we have not been able as yet minutely to examine it. From its cursory inspection, which is all we have had time for, we believe that it carries out pretty clearly all that we agreed to. We desire that your approval should be given to the terms which have been offered to us by the Phœnix Company, but of course we have no wish to coerce you into their adoption. We are anxious that you should obtain a clear and satisfactory view of the subject. You are aware that in the early days of this company's history we had many and great difficulties to contend with, and at that time there was a gentleman connected with us whose name is not often mentioned amongst us, although we have received great benefits from the plans which were laid down by him between thirty and forty years ago—I mean Mr. G. H. Foster. From that time to the present we have proceeded step by step to advance. At first our proprietors obtained no dividends at all; then we gave you one dividend a year. The first dividend we were enabled to give you was at the rate of 1½ per cent. per annum. The next was at the rate of 2½ per cent., and for two years subsequently we gave you 4 per cent. In another two years after that we gave you 5 per cent.; two years after that 6 per cent. From 1846 to 1851 we paid 6 per cent.; but from that time until 1854 our dividend was reduced to 5 per cent., consequent upon the opposition of the Surrey Consumers Gas Company, which then came into our district. From that time until 1861 we paid 6 per cent., and we then reached our maximum dividend of 10 per cent., which we have maintained ever since. It is to that prosperity we are now indebted for the offer made to us by the Phœnix Company. We have arrived at that state of affairs when, whatever may be the profits of the company, we can derive no further advantage for ourselves; we are limited to 10 per cent., and the Phœnix Company are prepared to guarantee us that rate of dividend in perpetuity. I think it is so good an offer that you can hardly refuse to accept it; at the same time we, as your directors, are prepared to carry out whatever determination you may be pleased to adopt. We simply say that in our opinion the present is an opportunity which may never occur again. If you accept it I believe the value of your property will rise in the market, and that you will never have cause to regret the step you take; and the effect of the amalgamation will be wider and more beneficial than our own personal concerns; the public will derive an advantage coeval with our own, because the reduction of expenditure which will thereby be effected will enable the Phœnix Company, I have no doubt, very shortly to come down to our low charge of 3s. 2d. per 1000, perhaps even lower. They are ready to lower the price to some extent immediately upon the amalgamation taking place, while the price which we are at present charging in our district is to be continued. There will, therefore, be an advantage to the public as well as to ourselves. Having made these few remarks,

I shall leave the matter in your hands to determine as to the course to be pursued, and will only say that I am ready to answer any questions which you may wish to put to me.

Mr. GRAY: I am sure we are all gratified to hear the statement made by the chairman. At our last meeting I expressed an opinion that it was decidedly for the interest of this company that the amalgamation with the Phœnix should take place, and since that time I have seen no reason to alter the advice I then gave; and while I am perfectly satisfied, as far as the interests of the company are concerned, that this step should be taken, I foresee that at no distant date the public will derive an advantage from the union, so that while we are protecting our shareholders we are benefiting the consumers in the districts of the two companies. I do not think we shall ever have so good an offer again of securing our dividends in perpetuity. In the early days of the company, no doubt, as stated by the chairman, we were exposed to many trials, and I know well the active and useful part taken by Mr. Foster in reference to our affairs. He was a man of business and discernment, and his efforts contributed in a great measure to the present prosperity of our undertaking. I cannot think that any one in the room will disagree with the recommendation made to us by the directors. I may say that Sir Charles D. Crossley, who is a large shareholder and a man of much influence, has stated to me that he highly approves of the step proposed to be taken. I shall not trespass further on your time, but will move—"That this meeting approves of the proposed amalgamation of the Phœnix and South Metropolitan Gas Companies, and authorizes the directors of the latter company to proceed, during the next session, with the bill which has been deposited for that purpose—viz., the South London Gas Bill."

Mr. MALTBY: I will second the resolution with much pleasure; but I may just say that I do not quite understand whether there is any defined time agreed upon for the calling up of the balance on the new shares. It was partly agreed at the last meeting that there should be a period named for the purpose.

The CHAIRMAN: It is impossible that we can tell now when it will be called up. Of course no call will be made till the money is required, because, until then, there will be nothing with which to pay the dividend upon it. As soon as any extensions become necessary, whether the amalgamation takes place or not, it will be called for.

Mr. MALTBY: I shall be quite satisfied if it is not postponed beyond the time when the necessities of our own company will require it.

The CHAIRMAN, in reply to an inquiry, said: As soon as £7 10s. per share is paid up on the new shares they will be placed in the same category as the original shares, and be entitled to the guaranteed dividend; the other portion will be issued as a separate stock, and have the ordinary dividend.

Mr. J. P. KITCHEN: It strikes me that our position, as compared with the Phœnix, is something like this. We are paying 10 per cent. dividends, and though we are restricted by Act of Parliament from paying more than that, we are able, in addition, to lay by a considerable reserve-fund.

The CHAIRMAN: We have a reserve-fund, but we cannot increase it. Whatever additional profits we earn must go to the consumers.

Mr. J. P. KITCHEN: We have £20,000 in that fund, and, therefore, there is no risk of our dividends. There is no reason also to suppose we shall not continue to earn 10 per cent., and, therefore, I think it only required a little pressure to induce the Phœnix Company to guarantee the whole of our capital.

The CHAIRMAN: We are assured by our parliamentary agent that it would not be allowed.

Mr. J. P. KITCHEN: We could get over the difficulty by calling up the capital.

The CHAIRMAN: But what should we do with the money? Besides, our accounts are submitted to a Government auditor, who would never agree to that.

Mr. J. P. KITCHEN: Then I think we might have a priority of call in the amalgamated companies.

The CHAIRMAN: The advantage of the proposed arrangement is that the maximum parliamentary dividend will be guaranteed to us in perpetuity. We shall have none of the risks to which we are now exposed of fines for impurity of gas or deficiency of illuminating power. If we stop as we are we cannot have more than 10 per cent. We have battled as hard as we could to get the best terms, and we think we have made a good bargain.

Mr. BUTLER: I should like to ask whether, if from any unforeseen circumstances the dividend should fall short in any one year, the Phœnix Company will make it up to us another year before paying their own shareholders?

Mr. PAULL: Is it really the fact that the dividend will be cumulative—that if anything happens through which they are not able to pay the South Metropolitan shareholders in one year, the dividend will be paid in the following year before they receive anything?

The CHAIRMAN: First of all we have £20,000 reserve-fund to meet such a contingency, but there is no likelihood of a deficiency, and it is hardly possible to conceive it with a company which has three times our capital.

The motion was then put, and carried unanimously.

The CHAIRMAN: That is the whole of the business for which you are convened. I am obliged by your attendance, and I think you have adopted the right course. The whole of our time and attention will be given to looking after your interests in carrying out this matter, and when we meet you again at a Wharncliffe meeting we shall be able to report to you how we have succeeded.

On the motion of Mr. GRAY, a vote of thanks was accorded to the directors, and the CHAIRMAN having acknowledged the same, the proceedings terminated.

PHŒNIX GASLIGHT AND COKE COMPANY.

AN Extraordinary General Meeting of the Proprietors of this Company was held at the Bridge House Hotel, Southwark, on Wednesday, December 20, "to consider and determine upon a draft bill for the amalgamation of this company with the South Metropolitan and Surrey Consumers Gas Companies"—EDWARD HORNER, Esq., in the chair.

The SECRETARY (Mr. Crookenden) having read the notice convening the meeting,

The CHAIRMAN called upon the solicitor to read the preamble of the bill and to explain the technical clauses.

Mr. JONES having read the several provisions of the bill,

The CHAIRMAN said he thought it right to state how it was that the whole of the three companies on the south side of the water had not been included in the bill. It was originally intended, as would be observed by the advertisement convening the meeting, that the Surrey Consumers Company should join the other two in the proposed amalgamation; but as negotiations went on it was found that the Surrey Consumers Company required terms which, in justice to their proprietors, the other companies could not concede. In carrying out the suggestion of the Board of Trade, it was felt to be good policy to include all the companies on the south side of the river; but that, of course, could not be done except upon terms which were perfectly equitable. Failing to make such an arrangement in respect of the Surrey Consumers Company, the name of that company was omitted from the bill, but power was taken to amalgamate that or any other company at a future time, with the sanction of the Board of Trade to a scheme for the purpose. The probability, therefore, was that, in the course of time, circumstances would arise which would bring the parties together again, so that eventually the policy of the bill would be carried out. It could not be done at the present time, except by giving the Surrey Consumers Company that which the directors of the other two companies thought they were not entitled to receive, and he believed events would show that they had acted for the best interests of their own proprietors. The question of the amalgamation of the metropolitan companies had been before the House of Commons, and more especially the Board of Trade, for several years. In 1866 a committee sat, of which Sir John Trollope was chairman, by whom it was unanimously recommended that the existing gas companies of the metropolis should amalgamate. In the following year, the committee over which Mr. Cardwell presided made the same recommendation, but with this addition, that the chairman would, if he could, have endeavoured to compel the companies to carry out the arrangement. Acting upon these recommendations, the Board of Trade, in 1870, gave notice to bring in a bill in which they sought compulsorily to effect the suggested amalgamation, and in that bill many clauses were introduced which would have been very injurious to the companies. The directors of most of the metropolitan companies had an interview with Mr. Bright, the President of the Board at that time, and in some measure succeeded in showing him that the proposed legislation would be unjust in its operations. Mr. Shaw Lefevre, the then under-secretary, differed from his superior, but the end of it was that, whether from pressure of business or some other cause, the bill was not produced in the way in which it was threatened, and it fell through that year. He had been informed that last session the board intended to bring in another bill, but the pressure of business was so great that it was again postponed. Looking at all these circumstances, the directors thought it would be much better to anticipate the action of the Board of Trade, and endeavour, if possible, to pass a bill for carrying out an arrangement amongst the companies themselves, rather than to have legislation thrust upon them. The proposed amalgamation with the South Metropolitan Company would be of great advantage to this company, inasmuch as they had twenty acres of surplus land available for further extension of works as required, and it would also bring into immediate occupation portions of the Phœnix Company's own works, which at present were in excess of their own requirements, but which were needed for maintaining the supply of the South Metropolitan Company's district, unless a large outlay in new retort-houses was incurred. The advantage to the South Metropolitan proprietors on the other hand, was that they would receive a preference dividend upon £300,000 of their capital already paid up, and another £100,000 to be hereafter called. Provision was made in the bill for the appointment of a public auditor, which, although an arrangement attended with expense, could hardly be considered a disadvantage, because it would give the public confidence in the accounts, that they were investigated by persons not appointed by the shareholders themselves. The most material disadvantage of the arrangement was, that in going to Parliament the company would have to adopt those supervisionary clauses which had been introduced into all recent Acts. By their present Act the Phœnix Company were in a very independent position. They were limited, it was true, with regard to the rate of dividend, and with regard to the per centage for reserve-fund, which was, however, double that allowed in recent Acts. These also contained many restrictions with regard to the examination of gas, fines, and other things, which at present this company did not suffer from; but probably after all these might be found to be merely technical, and not such as would cause any great inconvenience. On the other hand, the advantages of the proposed amalgamation were so great, that they quite counterbalanced the incidental disadvantages involved in this increased restriction. The directors had received a large number of letters from proprietors who could not be present at the meeting, highly approving of the proposed policy; and, looking at the stake which the directors themselves held in the company, it could not be supposed that they would advocate a course which would damage their own interests. He therefore had pleasure in proposing—"That this meeting approves of the proposed amalgamation of the Phœnix and South Metropolitan Gas Companies, and authorized the directors of the Phœnix Company to proceed during the next session with the bill which has been deposited for that purpose—viz., the South London Gas Bill."

Mr. R. C. L. BEVAN seconded the motion.

Mr. GRAY said the chairman had gone so minutely into all the circumstances connected with the proposed amalgamation that he was very unwilling to trespass upon the time of the meeting were it not that he might with propriety refer to what had taken place in his own company. The City Gas Company was amalgamated with the Chartered and Great Central Companies, and the arrangement was found to work most beneficially for all; and he believed that if the amalgamation of this company and the South Metropolitan were carried out, the same result would follow. Taking the whole transaction into consideration, the proposed arrangement was a most equitable one between the two companies, and the result must be highly beneficial to the shareholders of both. As the chairman had intimated, it was much better to originate legislation for themselves than for Government to bring in a general bill, because Government always pursued their course in a very dogmatic way, and the details of such a bill were entirely under their own control. On the other hand, with respect to a private bill, if conditions were sought to be introduced by the committee which were objectionable, it could be withdrawn. Looking at all the circumstances of this case, he anticipated a future of great prosperity, and that in the end it would not at all affect the dividend of the Phœnix proprietors.

The CHAIRMAN, in answer to a proprietor, said it was not intended by the bill to ask any alteration in the existing Acts of the company; they were taken precisely as they stood at the present time. The policy of the directors was to do that which would enable them to sell their gas at the lowest possible price consistently with paying their shareholders that to which they were entitled, for the lower they sold it the safer would their undertaking be against new inventions, or any other circumstances.

Mr. HOBSON asked whether the proportions of the Phœnix stock, between 7½ and 5 per cent., remained, by the provisions of the bill, in the same way as to privilege opposition as in the old Acts.

The CHAIRMAN said there was no change whatever. It was stated in the new bill that the existing Acts of the company remained in force, and it was the same with the Acts affecting the South Metropolitan Company.

Mr. HOBSON thought this was a very important matter. It had, of course, struck the directors that the South Metropolitan Company were selling gas at 3s. 2d. per 1000, while this company charged 3s. 9d. It by no means followed that this company would go down to 3s. 2d. upon the amalgamation; but there was little doubt they would soon have to reduce to 3s. 6d., because the disparity between existing prices could not long continue. Parliament would also probably require an increase of the illuminating power of the gas supplied, the standard in most of the new Acts being 16, and not, as in this company's Act, 14. He had carefully considered the whole question of the proposed amalgamation, and he was satisfied that in taking over the South Metropolitan the Phœnix Company were not injuring themselves at all while guaranteeing to the South Metropolitan proprietors their 10 per cent. The only thing he had had any doubt about was whether this company were right in putting £400,000 of capital over themselves; but he had satisfied himself that it was the soundest policy they could adopt, looking at the extensive trade which the South Metropolitan Company brought over with them. They were able to do one-half the amount of business done by this company with one-third of the capital. He therefore most heartily concurred in the scheme of amalgamation in every way.

Colonel HIGGINS said he should be quite content to rest his opinion upon the statements of the chairman, for he had always reposed great confidence in the board of this company, and was certain they would not introduce a scheme which was not for the benefit of the shareholders at large. There was one thing which gratified him in the statements made that day, and that was that while they were benefiting themselves as shareholders, there was a prospect held out that the public would also gain a benefit by the proposed amalgamation. Of course, the shareholders were glad to get as much as they could, and he for one was delighted with the dividend he received from the company; but he

should go home much happier for the belief that the public would participate with the shareholders in the advantages of the new arrangement.

The CHAIRMAN said the honourable proprietor (Mr. Hobson) had referred to a point which perhaps he himself ought to have mentioned. He alluded to the fact that the Phœnix Company were charging 3s. 9d. while the South Metropolitan Company charged only 3s. 2d. He might state that the matter had been considered by the directors, and even if the proposed arrangement were not carried out they would at once reduce their price to 3s. 6d. The company were in a very good position, and if the amalgamation were carried out, they would be able to make a large reduction to the consumers. Parliament might possibly impose upon them a higher illuminating power without making so great a reduction of price, and that was a matter with which they would have to deal; but as they were not going to ask Parliament for anything, they would have the power to withdraw the bill if it was attempted to introduce provisions which would be injurious to the proprietors.

The resolution was then put, and carried unanimously.

A vote of thanks to the chairman terminated the proceedings.

PATENT GAS COMPANY, LIMITED.

The First Ordinary Meeting of the Shareholders was held last Saturday, at the City Terminus Hotel—Mr. JOHN OGLE, chairman of the company, presiding. The meeting was so numerously attended that it was found necessary unexpectedly to hold it in the great hall of the hotel.

The SECRETARY (Mr. W. H. Beck) having read the notice convening the meeting, and the report having been taken as read,

The CHAIRMAN rose to move the adoption of the report and accompanying statement of accounts. In doing so, he expressed the great pleasure which the directors experienced in being able to lay before the shareholders the present statement, which spread over that period extending from the incorporation of the company on the 1st of September, 1870, to the 16th of December, 1871. From these accounts it would be observed that the directors had issued 30,000 of the 50,000 shares forming the nominal capital of the company. The first and second issue, of 12,500 and 2500 shares respectively, had been fully paid up; and on the last issue of 15,000 shares the sum of 5s. only had been paid, leaving a reserve of £11,250 yet to be called up if required for the purposes of the company. It was gratifying to be able to report that the very carefully conducted and long-continued experiments on the working of Dr. Eveleigh's patent process, which had been made at the Peckham works, had in every way satisfied the expectations of the directors, and fully confirmed the statements they had put forward. Before the company entered into any arrangement with Dr. Eveleigh it was clearly understood that the works should be superintended by an eminent engineer, and that stipulation had been agreed to and acted upon. The company was then introduced to their present consulting engineer, Mr. T. Randolph Mellor, who, after going through various experiments, expressed his willingness to go on with the works, and gave his certificate to the effect that the works, if carried on as proposed, would be successful. Guided by the results obtained from these experiments, and acting upon the opinion and advice of Mr. Mellor, the directors entered into a contract with the East Barnet Gas and Water Company, and had consequently erected works at Barnet on a scale to enable them to prove the commercial success of the process by supplying continuously the requirements of an extensive district. The supply of gas from those works would commence from the 1st of January. The thanks of the Patent Gas Company were due to the chairman and board of the East Barnet Company for allowing them to use their works. The Barnet Company was a very popular company, as supplying the best gas; and although this was a disadvantage to his company, he (the chairman), speaking for the directors, was not in the least afraid of the comparison which should be instituted. He had himself, so recently as twelve o'clock the previous night, seen the gas burning in a friend's drawing-room, and it was so beautifully brilliant that in any part of the room you could thread a needle with the smallest eye. The works were now nearly finished, and it was the object of the board to make them such a commercial success and profitable undertaking that it would become a necessity for all the gas companies to take the matter up. In consequence of the growing importance of the company, and in order that the interests of the shareholders might be more fully represented at the board, the directors propose to convene, at an early date, an extraordinary general meeting for the purpose of considering the advisability of altering the Articles of Association, to enable them to add to their number, and it was their intention to propose Dr. Eveleigh, to whom they were under such weighty obligations, for election to one of the new seats at the board. The chairman then referred to the balance-sheet, which showed a balance in hand over and above all outlay and liabilities, of £3079 18s. 1d., and concluded by formally moving that the report and accompanying statement of accounts be received and adopted.

Mr. W. PRICE seconded, and the motion was carried unanimously.

The formal business of the meeting having been gone through, a noisy discussion, which ultimately degenerated into a general uproar, arose on the following resolution, of which Mr. H. R. Lacey had given notice:—"That shareholders holding shares of the third issue be allowed the option of paying up thereon either in part or full." The mover stated that the opinion of counsel (Mr. T. W. Tyndall, Inner Temple), had been taken on the question. Whereupon the solicitor for the company read the opinion of Mr. Jessel, the present Solicitor-General, which was directly opposed to that of Mr. Tyndall.

The motion having been seconded, several amendments were proposed, and after a show of hands had been taken amidst general confusion, a poll was demanded on all sides, which the chairman decided should be held in the same place on the following (next) Wednesday at one o'clock.

The meeting then separated.

ON THE GASES OCCLUDED IN COAL.

By Dr. E. MEYER.

I desire this paper to be considered only as a preliminary notice, it being my intention to extend these researches. Since, so far as I am acquainted, the question whether any at all, and, if so, what kind of gases are occluded in coal, has not been experimentally dealt with, it occurred to me to test Zwickau coals (Saxony) in this respect.

Lumps of hard and compact coal the size of a walnut were put into a flask, previously partly filled with thoroughly well-boiled and hot distilled water, the flask was next closed with a perforated caoutchouc stopper wherein a glass tube was fitted, which, serving as gas-conveying tube, was carried into a vessel filled with water deprived of air. The apparatus thus arranged was kept at boiling heat for some time in order thereby to eliminate the film of air which mechanically adheres to the coal. The boiling was further continued after the gas-conducting tube had been placed over a graduated glass tube, previously filled with distilled water freed from air and placed on a pneumatic trough. The gas thus collected (constantly evolved from the lumps of coal) was analyzed according to Bunsen's method, and found to consist in the first sample operated upon, percentically, of—Carbonic acid, 16·9; marsh gas, 20·4; nitrogen, 53·3; oxygen, 1·7; heavy carburetted hydrogens absorbable by fuming sulphuric acid, 7·7. Second sample—Carbonic acid, 22·4; marsh gas, 22·3; nitrogen, 48·0; oxygen, 4·1; heavy carburetted hydrogens absorbable by fuming sulphuric acid. The large quantity of nitrogen and the small quantity of oxygen deserve special notice. The samples of coal experimented with had been kept in a cellar for a period of several months in contact with air, so that it would appear that the oxygen of the air absorbed has served for the oxidation of the coal and formation of carbonic acid.

I may not also neglect to call attention to the heavy carburetted hydrogens which, as far as I am aware, have not been hitherto noticed as being occluded in coal. It might be surmised, yet it is very improbable, that these heavy carburetted hydrogens have been formed by the heating of the coal under water at 100°. I intend to elucidate this point by exhausting the gases from coal with the aid of a mercurial air-pump at the ordinary temperature of the air in order to ascertain whether the same kind of coal will then also yield carburetted hydrogens absorbable by fuming sulphuric acid. These researches will be continued and extended to other kinds of coal. The results of my experiments I shall publish at a future date.—*Journal für Praktische Chemie.*

MR. FRED. E. STIMPSON having accepted the chair of Chemistry and Physics in the University of Kansas, Mr. C. W. Hinman has been appointed State Inspector of Gas and Meters for the State of Massachusetts.

NEW DRAINAGE SCHEME FOR WEYMOUTH.—The Weymouth Local Board, on Thursday last, adopted a drainage scheme prepared by Mr. Coode, civil engineer, the estimated outlay for which is £28,000. The plan embraces a dam across the harbour backwater to keep the mud always submerged and the collection of the sewage of the town at one place, whence it is to be pumped to a higher level and utilized for irrigation on land a mile or more from Weymouth.

EDINBURGH AND DISTRICT WATER TRUST.—A meeting of the Water Trustees was held on Friday, Dec. 29—Lord Provost Law presiding—to consider certain recommendations by the Town Councils of Leith and Portobello in regard to the interdict against the trustees. The recommendations were to the effect that a reclaiming-note should be lodged by the present trust, with the view of enabling the Corporations of Edinburgh, Leith, and Portobello to reconsider the whole question of water supply, and the best mode of equitably dealing with the questions involved in the interdict case. Provost Watt moved, and Bailie Hunter seconded a resolution to the effect that a reclaiming-note in accordance with the recommendation be lodged in the name of the trust. Mr. Wormald moved, as an amendment, that the consideration of the proposals of Leith and Portobello be postponed until the corporation of Edinburgh reports. After a rather warm discussion the amendment was carried by 13 votes to 9.

PERTH—GAS COMMISSION.—A special meeting of the Perth Gas Commissioners was held on Thursday evening, Dec. 28, 1871—Lord Provost Pullar presiding. The committee recommended that from the 1st of January till the 15th of May, 1872, the price of gas should be 5s. per 1000 cubic feet to consumers of above 100,000 feet, 5s. 10d. to consumers under that amount, and 6s. 8d. to the village of New Scone. The provost said he had had several conversations with members of the General Station Committee, who wish the station to be supplied with gas at the rate of 4s. per 1000 cubic feet. The Station Committee were of opinion that they could manufacture gas for themselves at 4s. per 1000 feet. He had, however, informed them that the price of gas could not be reduced in the meantime. After some conversation the recommendation of the committee was adopted. Treasurer Morton and Mr. Graham were appointed to sign the annuity certificates in connexion with the Perth Gas Companies.

BRADDOCK'S GAS COOKING APPARATUS.—The *Oldham Chronicle*, in giving an account of the recent Bazaar in Oldham, in aid of the infirmary of the town, says: "One of the most interesting appliances to the infirmary, and which attracted the attention of the numerous visitors, more especially the ladies, was the gas cooking apparatus on improved principles, manufactured and presented to the institution by Messrs. J. & J. Braddock, of the Globe Meter-Works, Oldham. It consists of a cooking range of two ovens, grate for boiling, and hot-plate. At one time there were cooking a large piece of beef, three or four legs of mutton, a turkey, and fowls and game innumerable. They were placed on shelves, one above another, inside the oven or roasters, and cooking went on steadily from beginning to end, and all done to perfection. At the same time, over the boiling grate were boiled a turkey, legs of mutton, ox-tail soup, and vegetables. When the meat was cooked, it was placed on the hot-plate over the oven, ready for dishing up; and the whole was conducted by one person, without any excessive heat or fatigue, and with remarkable cleanliness, and, as we are informed, at very little cost. The additional weight of meats, gravies, and drippings will, we are assured, more than pay for the cost of gas used in cooking. We believe this is the most complete and efficient gas cooking apparatus in the neighbourhood, and it reflects great credit on the manufacturers."

PROPOSED PURCHASE OF THE GAS-WORKS AT OSSETT.—On Thursday evening, Dec. 14, a public meeting of the owners and ratepayers of the township of Ossett-cum-Gawthorpe was held in the Trinity Church School-Room, by adjournment from the 29th of November, to consider the question of the purchase of the gas-works. The Rev. Thos. Lee, vicar of Trinity Church, presided. Mr. Charles Phillips, a member of the local board, stated that the chairman (Mr. Lee) had attended a meeting of the local board, as deputed by the last ratepayers meeting, and he laid before the board the resolutions passed at that meeting. The board referred the question to the Gas Committee, and that committee had resolved as follows:—"That the Gas Committee recommend that the board, either solely or in conjunction with the Horbury Local Board, make the following offer to the gas company:—That the board or boards take over all the assets and liabilities of the company, and pay to the proprietors any dividends to which they are entitled under their Act; and also a further perpetual dividend of 10 per cent. on their authorized capital, or £11 5s. for each authorized share, and also any deficiency in dividend to which such share may be entitled." This resolution was adopted by the meeting. It was also resolved that the meeting authorize the Gas Committee of the local board to offer the gas company such sum as they may deem advisable, and that in the event of their failing to agree with the company, they oppose the company's application to Parliament for increase of capital and powers.

THE METROPOLITAN BOARD OF WORKS AND THE CHEMICALS SUPPLIED TO THE GAS EXAMINERS.—At the last meeting of the board before the Christmas recess, the following report from the General Purposes Committee was received and adopted:—"In compliance with your resolution of the 1st inst., your committee have considered the letter from the Board of Trade enclosing copy of a letter from the Imperial Gas Company, expressing their opinion that the cost of the chemicals supplied by the gas referees to the gas examiners at the company's testing-station should be borne by this board. Your committee have carefully considered the provisions of the Act of Parliament, and have conferred with the solicitor as to the scope and intention of the clauses bearing upon the question adverted to in the letter from the gas company. The objections of the company to pay the charges referred to are based upon section 80 of their Act, which provides that the remuneration of the gas examiners, and all expenses incurred by them in executing their duties, shall be paid by this board, but they appear to have overlooked section 55 of the Act, which enacts that the referees 'shall from time to time prescribe and certify what places and *what apparatus* therein for testing the illuminating power and purity of gas shall be provided by the company.' Your committee are of opinion that in the term *apparatus*, it was the intention of the Legislature to include the chemicals, and all other matters necessary for testing the gas, without which such testing would obviously be incomplete, and under these circumstances they consider that the charges referred to should be paid by the gas company and not by this board. They recommend that a communication to that effect be addressed to the Board of Trade."

PRESENTATION TO ALFRED ROBINSON, ESQ.—At the Leicester Gas-Works, on Wednesday evening last, the foreman (Mr. Wilson) on behalf of the men employed at the works, Gas Street, Navigation Street, presented to Alfred Robinson, Esq., an illuminated address, and also a silver epergne. Before presenting the address he said, a very short time since he was very agreeably in

formed that it was the unanimous wish of the workmen employed in those works to ask his acceptance of some lasting proof of their humble attachment to himself personally, not as the head of the firm only, but also for the great interest he had taken in their general welfare. It was for that purpose they had invited him there that night, being fully assured the same good feeling which had always existed in the past would continue in the future. He then presented the address as follows:—"Dec. 20, 1871. To Alfred Robinson, Esq., Gas-Works, Leicester. Dear and honoured Sir,—We, the workmen in your employment at the Leicester Gas-Works, have great pleasure in presenting you with the accompanying centre-piece, as a token of the high esteem in which you are held by us, and as an expression of the deep sense we entertain of the kind and generous treatment we have always experienced at your hands. The great consideration you have always shown for our comfort and welfare; your noble and heartfelt kindness in the hour of affliction and distress, have called forth feelings of the liveliest gratitude towards you and all the members of your family. We would also beg to offer our congratulations that your two sons are now associated with you in the management of these works, which, whilst relieving you from the active duties connected therewith, give us every reason to hope that the family connexion which has so long existed will continue for many years to come. Wishing prosperity and happiness may ever attend you, and that you and Mrs. Robinson may long be spared to each other, we remain, dear and honoured sir, your obedient servants (signed on behalf of the workmen), THOS. WILSON, foreman."—Mr. Wilson then presented Mr. Robinson with a very elegant silver epergne, bearing the following inscription:—"Presented to Alfred Robinson, Esq., by the workmen in his employment at the Leicester Gas-Works, in grateful acknowledgment of the kind and considerate regard he has always shown for their welfare." Mr. Robinson returned thanks in a few well-chosen remarks, and after three hearty cheers had been given, the proceedings terminated.

VENTILATION WITHOUT DRAUGHT.—One of the most essential conditions upon which depends the maintenance of health is the ventilation of apartments, whether living-rooms, sleeping-rooms, or work-rooms, without the introduction of draughts of cold air at unseasonable times and in improper or drangerous directions. If this problem has not been completely solved, at least a most important contribution to its solution has been made by the system devised by Mr. W. Potts, of Birmingham, which has during the last three years been introduced into different hospitals, schools, Government buildings, factories, offices, and private dwellings. According to this plan a hollow cornice, by preference made of zinc, runs continuously round the room, as the ordinary plaster cornice does. This metal cornice is divided longitudinally into two channels. The fresh air is admitted into the pure air channel, or lower chamber, through openings in the wall, arranged at intervals according to the purpose for which the room is used, and descends into the room near the wall line through the perforation at the back of the lowest member. These perforations are invisible from the front, and being stopped immediately in front of the openings in the wall, the air cannot fall by a direct stream into the room, but is directed along the channel, and descends evenly and gently by its own gravity, and becomes diffused imperceptibly through the room; because, when first admitted, it is heavier than the vitiated or heated air within, and consequently flows freely in, but in descending it becomes warmed by contact with the warmer air and thus loses gradually its weight and force; and as it flows down it comes each moment into a cooler and denser atmosphere—thus, from two natural causes, it cannot produce a draught when properly checked and distributed. The upper or foul air channel communicates with the smoke-flue or air-shaft, or other extracting channel; it is perforated continuously along the face with ornamental patterns, and the ceiling being darkened at the back, these patterns show as stencilled enrichments on the cornice. The vitiated air, whether from combustion or the human breath, rises, when given off, to the highest point, is there drawn by the outward current through the perforations into the channel, and conveyed away by the air-shaft or flue. It encounters no opposition to its exit, as the cold air coming in descends for a considerable distance close to the wall line, and is admitted at a lower level, and so assists instead of retarding the escape of the vitiated air. This description will be sufficient to show the simplicity of the plan, and at the same time to indicate the principles upon which it is founded. The zinc cornices, it may be added, are far more ornamental and at the same time cheaper than the common plaster ones, and admit of every variety of modification in shape or design in order to meet the varying circumstances under which they may have to be applied. The plan has already been pretty largely brought into operation, and has been applied with success to the rooms of the School Board in Bridge Street, Blackfriars, and to the kitchens in Somerset House. It may also be applied to the ventilation of ships, especially those employed in the cattle trade, and will, if the hopes of the inventor are realized, go far to supersede the use of punkahs in India.

Register of New Patents.

351.—CHARLES BALY, of Gray's Inn, in the co. of Middlesex, gentleman, for "*Improvements in the chemical means, apparatus, and machinery employed in deodorizing, disinfecting, and converting into superior manure the sewage and other fæcal matters, whether human, animal, vegetable, solid, or liquid, or the blood of animals, or other refuse matters derived from various sources.*" A communication. Patent dated Feb. 10, 1871.

According to this invention, the liquid or the semi-liquid sewage is conveyed by hermetically-sealed or air-tight pipes, hose, carts, boats, or sewers, into suitable works arranged in apparatus, filters, and machinery for treating and converting the sewage or other refuse matters into manure. The sewage is conveyed into machines for mixing and combining it with other materials by means of rotatory apparatus, so as to deodorize and convert the mass into a pulverizable manure. The materials employed for the deodorization and conversion of the sewage and other matters into manure are—first, wood charcoal, known as retorted charcoal. The second material is slaked lime, and the above two substances are mixed together by weight of one part retorted charcoal to two parts of slaked lime, making a composition by weight equal to three parts applicable to five parts of sewage.

359.—HENRY JOSEPH FRANCIS HUBERT FOVEAUX, of 62, Strand, in the co. of Middlesex, surgical instrument maker, for "*An improved automatic valve for arresting the discharge of liquid from a reservoir while the level of the liquid is yet above the outlet.*" Provisional protection only obtained. Dated Feb. 13, 1871.

This invention consists of a float carrying a plug at its under surface, and of a valve-seat or socket fixed above the level of the bottom of a reservoir, and forming the only outlet for the liquid it contains. The advantage of this valve is, that before the level of the liquid can have lowered to the top of the valve-seat, the plug will have entered the socket and closed the outlet, so that the reservoir, say of a clyster-pump, cannot be inadvertantly emptied, and an involuntary injection of air immediately follow that of the liquid.

APPLICATIONS FOR LETTERS PATENT.

3248.—JAMES GUNN, of Edinburgh, in the co. of Mid Lothian, N.B., for "*Improvements in water-closets and sinks.*" Dec. 1, 1871.

3254.—ALBERT MARCIUS SILBER, of Wood Street, Cheapside, in the City of London, merchant, and FREDERICK WHITE, of Camberwell, in the co. of Surrey, watchmaker, for "*Improvements in apparatus for heating, cooking, and lighting purposes.*" Dec. 1, 1871,

3263.—WILLIAM MANN, of the gas-works, Dorset Street, in the City of London, engineer, for "*Improvements in the method of purifying gas, and in the apparatus employed for that purpose.*" Dec. 2, 1871.

3273.—SAMUEL JONES PAYNE, of Cardiff, in the co. of Glamorgan, merchant, for "*A new and improved composition or combination of materials to be used in the manufacture of fire-bricks, crucibles, retorts, and other fire-ware goods, burnt or unburnt.*" (Complete specification.) Dec. 5, 1871.

3280.—HENRY EDWARD NEWTON, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements applicable to street and other gas-lamps, for the purpose of preventing stoppages in the supply-pipes.*" A communication. Dec. 5, 1871.

3285.—ALEXANDER JERVIS, of Edinburgh, in the co. of Mid Lothian, N.B., for "*Improvements in economic water-supply apparatus.*" Dec. 6, 1871.

3297.—THOMAS CHARLES EBDY, F.R.I., B.A., of the city of Durham, architect, for "*Improvements in stoves for warming, ventilating, and disinfecting buildings heated by gas, coke, mineral oils, or other fluids.*" Dec. 7, 1871.

3325.—WILLIAM ROBERTS, of Westferry Road, Millwall, in the co. of Middlesex, for "*Improvements in valves for supplying water to cisterns.*" Dec. 9, 1871.

3335.—JOHN SOMERVILLE, gas engineer, and JOHN ROBINSON, mechanic, both of the gas-works, in the city of Dublin, for "*Improvements in machinery or apparatus for charging, discharging, and scurfing retorts and furnaces.*" Dec. 9, 1871.

3338.—HENRY JOSIAH JUPP, of Thomas Street, Burdett Road, Limehouse, in the co. of Middlesex, wharfinger, for "*The manufacture of an improved composition for making or covering roads and footways, and for other analogous purposes.*" (Complete specification.) Dec. 11, 1871.

3342.—WILLIAM VERITY and BENJAMIN VERITY, both of 127, Regent Street, in the co. of Middlesex, for "*An improved perforated fire-clay gas-burner, adapted for heating or cooking purposes.*" Dec. 11, 1871.

3344.—JAMES MOFFAT, of the firm of J. F. Allan and Co., of Glasgow, in the co. of Lanark, N.B., gas engineers, for "*Improvements in apparatus for making illuminating gas.*" Dec. 11, 1871.

3348.—GEORGE EVELEIGH, of 16, Asylum Road, Peckham, consulting chemist, for "*An improved means of purifying gas from ammonia.*" Dec. 11, 1871.

3357.—GEORGE EVANS, of Norwich, in the co. of Norfolk, gas manager, for "*Improvements in the manufacture of asphalte or composition adapted for paving and other similar uses.*" Dec. 12, 1871.

3367.—JOSEPH BRAY, of Ashton-under-Lyne, in the co. of Lancaster, brass-founder, for "*Improvements in apparatus for measuring water and other fluids.*" Dec. 13, 1871.

3368.—JOHN BURLEY WARING, of 28, Southampton Street, Strand, London, for "*A newly contrived closet-pan to keep the liquid and solid excreta of human beings apart by means of a funnel-shaped compartment and orifice, the front or top of pan to carry off the urine by itself.*" Dec. 13, 1871.

3372.—FRANKLIN HOCKING and JOHN PINKER, both of Liverpool, in the co. of Lancaster, engineers, for "*A new or improved slide-valve.*" Dec. 13, 1871.

3379.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in the generation of inflammable gases from coal, wood, peat, and other substances containing carbon and hydrogen.*" A communication. Dec. 13, 1871.

3380.—JOHN CUNNINGTON, of Oakley Square, St. Pancras, in the co. of Middlesex, for "*Improvements in apparatus for ensuring the proper discharge of sewage matters from dwelling-houses and other buildings, and for preventing the return of sewer gases and the entrance of vermin into the same.*" Dec. 13, 1871.

3383.—GEORGE HENRY ELLIS, of 20, High Holborn, in the co. of Middlesex, engineer, for "*Improvements in asphalte roads, ways, and floors.*" Dec. 14, 1871.

3388.—WILLIAM HENRY TAYLER, of Tudor House, Anerley, in the co. of Surrey, doctor of medicine, for "*Improvements in the construction of drains, traps, and closets.*" Dec. 14, 1871.

3391.—ALFRED MINTON, of the Victoria Iron-Works, Hackney Wick, in the co. of Middlesex, for "*Improvements in water-closets.*" Dec. 14, 1871.

3396.—CHARLES WRIGHTMAN HARRISON, of South Kensington, in the co. of Middlesex, gentleman, for "*Improvements in gas-burners.*" Dec. 14, 1871.

3397.—PATRICK ADIE, of Pall Mall, in the co. of Middlesex, mathematical instrument maker, for "*Improvements in lanterns.*" Dec. 15, 1871.

3398.—JOHN PENDER, of Arlington Street, in the co. of Middlesex, esquire, and MARTIN RAE, of Uphall, in the co. of Linlithgow, N.B., for "*Improvements in the manufacture of artificial asphalte.*" Dec. 15, 1871.

3410.—JOSEPH WHITEHEAD and WILLIAM FOSTER, both of Blackburn, in the co. of Lancaster, for "*Improved hydraulic mains used in the manufacture of coal gas.*" Dec. 16, 1871.

3416.—ALEXANDER MELVILLE CLARK, of 53, Chancery Lane, in the co. of Middlesex, patent agent, for "*Improved apparatus for generating and purifying gases for lighting and heating purposes.*" A communication. Dec. 16, 1871.

3432.—FREDERICK HURD, of the Albion Foundry, Wakefield, in the co. of York, engineer, for "*Improvements in the construction of main-pipes for air, gas, water, and other purposes, and in the pavement of streets and roads.*" Dec. 19, 1871.

3436.—JAMES ALFRED WANKLYN, of Harrington Street, Hampstead Road, in the co. of Middlesex, chemist, for "*Improvements in the manufacture of ammonia salts.*" Dec. 19, 1871.

3447.—ALEXANDER MELVILLE CLARK, of 53, Chancery Lane, in the co. of Middlesex, patent agent, for "*Improved apparatus for the production of gas for lighting and heating purposes.*" A communication. Dec. 20, 1871.

3449.—JAMES EGLINTON ANDERSON GWYNNE, of Essex Street Works, Strand, in the co. of Middlesex, civil engineer, and BENJAMIN BEALE, of Elizabeth Cottage, Parnel Street, New Cross, Deptford, in the co. of Kent, mechanical engineer, for "*Improvements in the construction of rotary engines, which said improvements are applicable for lifting, forcing, and exhausting.*" Dec. 20, 1871.

3455.—WILLIAM ANDERSON, of Inverkeithing, in the co. of Fife, N.B., for "*Improvements in domestic apparatus for rendering sewage gases innocuous.*" Dec. 21, 1871.

3458.—STEWART PETERS and JOHN PETERS, of Glasgow, in the co. of Lanark, N.B., coppersmiths and tin-plate workers, for "*Improvements in economic water-supply apparatus for water-closets.*" Dec. 21, 1871.

3460.—WILLIAM PAWSON, of Westgate, Grantham, in the co. of Lincoln, plumber, for "*Improvements in water-closets.*" Dec. 21, 1871.

3482.—ARTHUR AUCKLAND COCHRANE, of the city of Westminster, in the co. of Middlesex, gentleman, for "*Improvements in the treatment of certain substances for heating and illuminating purposes.*" Dec. 23, 1871.

3483.—DAVID HUNTER BRANDON, of 13, Rue Gaillon, Paris, France, engineer, for "*Improvements in the construction of water-meters and motors or engines.*" A communication. Dec. 23, 1871.

3487.—GEORGE WIGHTMAN, of Elkaley, near Retford, in the co. of Nottingham, engineer, for "*Improvements in pumps and hydraulic, steam, and other engines.*" Dec. 23, 1871.

GRANTS OF PROVISIONAL PROTECTION.

2247.—KARL WENZEL ZENGER, professor of natural philosophy at the Polytechnic Institute of Prague, in Bohemia, in the empire of Austria, for "*A new method of manufacturing gas and graphite from mineral, vegetable, and animal coal, and from tar and other hydrocarbons.*" Aug. 26, 1871.

2997.—Hugh Smith, of 21, Westbourne Terrace Road, in the co. of Middlesex, for "*Improvements in the treatment of sewage to separate impurities therefrom.*" Nov. 7, 1871.

3042.—Pascal Alphonse Miccio, of 29, Rue de Londres, Paris, merchant, for "*An improved paper book for deodorizing water-closets and other places.*" Nov. 10, 1871.

3094.—George Spencer, of 77, Cannon Street, London, civil engineer, for "*Improvements in asphalte paving.*" Nov. 16, 1871.

3217.—William Robert Lake, of the firm of Haseltine, Lake, and Co., of Southampton Buildings, London, patent agents, for "*Improvements in lamps or lanterns, chiefly designed for out-of-door situations.*" A communication. Nov. 28, 1871.

3233.—François Jules Fahlman, of Stockholm, in the kingdom of Sweden, for "*Improved apparatus for disinfecting and collecting fæcal matters, sewage, and manufacturing refuse.*" Nov. 29, 1871.

3245.—Richard Brown Evered, of 28, Drury Lane, in the co. of Middlesex, brassfounder, for "*Improvements in taps or valves.*" Nov. 30, 1871.

3248.—James Gunn, of Edinburgh, in the co. of Mid Lothian, N.B., for "*Improvements in water-closets and sinks.*" Dec. 1, 1871.

3254.—Albert Marcius Silber, of Wood Street, Cheapside, in the City of London, merchant, and Frederick White, of Camberwell, in the co. of Surrey, watchmaker, for "*Improvements in apparatus for heating, cooking, and lighting purposes.*" Dec. 1, 1871.

3263.—William Mann, of the gas-works, Dorset Street, in the City of London, engineer, for "*Improvements in the method of purifying gas, and in the apparatus employed for that purpose.*" Dec. 2, 1871.

3280.—Henry Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements applicable to street and other gas-lamps, for the purpose of preventing stoppages in the supply-pipes.*" A communication. Dec. 5, 1871.

3285.—Alexander Jervis, of Edinburgh, in the co. of Mid Lothian, N.B., for "*Improvements in economic water-supply apparatus.*" Dec. 6, 1871.

3325.—William Roberts, of Westferry Road, Milwall, in the co. of Middlesex, for "*Improvements in valves for supplying water to cisterns.*" Dec. 9, 1871.

3342.—William Verity and Benjamin Verity, both of 127, Regent Street, in the co. of Middlesex, for "*An improved perforated fire-clay gas-burner adapted for heating and cooking purposes.*" Dec. 11, 1871.

3344.—James Moffat, of the firm of J. F. Allan and Co., of Glasgow, in the co. of Lanark, N.B., gas engineers, for "*Improvements in apparatus for making illuminating gas.*" Dec. 11, 1871.

3357.—George Evans, of Norwich, in the co. of Norfolk, gas manager, for "*Improvements in the manufacture of asphalte or composition adapted for paving and other similar uses.*" Dec. 12, 1871.

3367.—Joseph Bray, of Ashton-under-Lyne, in the co. of Lancaster, brassfounder, for "*Improvements in apparatus for measuring water and other fluids.*" Dec. 13, 1871.

3368.—John Burley Warring, of 28, Southampton Street, Strand, London, architect, for "*A newly contrived closet-pan to keep the liquid and solid excreta of human beings apart by means of a funnel-shaped compartment and orifice, the front of top of pan to carry off the urine by itself.*" Dec. 13, 1871.

3379.—William Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in the generation of inflammable gases from coal, wood, peat, and other substances containing carbon and hydrogen.*" A communication. Dec. 13, 1871.

3380.—John Cunnington, of Oakley Square, St. Pancras, in the co. of Middlesex, for "*Improvements in apparatus for ensuring the proper discharge of sewage matters from dwelling-houses and other buildings, and for preventing the return of sewer gases and the entrance of vermin into the same.*" Dec. 13, 1871.

INVENTION PROTECTED FOR SIX MONTHS ON THE DEPOSIT OF A COMPLETE SPECIFICATION.

3273.—Samuel Jones Payne, of Cardiff, in the co. of Glamorgan, merchant, for "*A new and improved composition or combination of materials to be used in the manufacture of fire-bricks, crucibles, retorts, and other fire-ware goods, burnt or unburnt.*" Dec. 5, 1871.

NOTICES TO PROCEED.

2025.—David Hancock and Charles Pearse, both of High Wycombe, in the co. of Bucks, for "*Improvements in the production of lighting gas, and in apparatus therefor.*" Aug. 1, 1871.

2033.—Edme Augustin Chameroy, of 123, Boulevard de Strasbourg, Paris, for "*Improvements in apparatus for regulating the pressure in delivery-pipes of water, gas, steam, and other fluids.*" Aug. 2, 1871.

2076.—Andrew Barclay, of Kilmarnock, in the co. of Ayr, N.B., for "*Improvements in coking coal and generating gas for heating and other purposes, and in the apparatus employed therefor.*" Aug. 5, 1871.

2096.—Henri Adrien Bonneville, of 18, Chaussée d'Antin, Paris, in France, and 6, Piccadilly, in the co. of Middlesex, patent agent, for "*A new and improved composition for the paving of roads, streets, terraces, and other places.*" A communication. Aug. 9, 1871.

2135.—Thomas Roberts, of the city of Manchester, in the co. of Lancaster, for "*Improvements in and apparatus for filtering liquids.*" Aug. 14, 1871.

2140.—James Irvine Lupton, of Richmond, in the co. of Surrey, for "*Improvements in the mode of deodorizing and utilizing sewage.*" Aug 15, 1871.

2180.—Edwin John Grabham, of 107, Shepherdess Walk, City Road, in the co. of Middlesex, mechanical engineer, for "*Improvements in the apparatus used for regulating the supply of gas.*" Aug. 19, 1871.

2194.—John Robert Breach, of 4, Bridgewater Square, Barbican, in the City of London, agent, for "*Improved gas-fires.*" Aug. 21, 1871.

2247.—Karl Wenzel Zenger, professor of natural philosophy at the Polytechnic Institute of Prague, in Bohemia, in the empire of Austria, for "*A new method of manufacturing gas and graphite from mineral, vegetable, and animal coal, and from tar and other hydrocarbons.*" Aug. 26, 1871.

2495.—James Banks, of Liverpool, in the co. of Lancaster, iron fence manufacturer, and William Walker, of the same place, consulting engineer, for "*An improved system for the treatment of sewage, parts of which are applicable to the filtration of water for the use of towns, and other liquids, on an extensive scale, and apparatus therefor.*" Sept. 22, 1871.

2606.—William Thomas Walker, of 7, Holly Terrace, Highgate, in the co. of Middlesex, for "*Improvements in apparatus used in gas-works for cleansing and purifying gas from ammonia and other impurities.*" Oct. 3, 1871.

2696.—Robert Milburn and Thomas Browning, both of 76, Church Lane, Whitechapel, London, in the co. of Middlesex, for "*Improvements in apparatus for drying and treating sewage deposit and some other matters.*" Oct. 11, 1871.

2761.—James Welsh, David Hope, and James Cambell Stevenson, of Liverpool and Southport, in the co. of Lancaster, for "*Improved means and apparatus to be used in purifying atmospheric air previous to admission into dwelling-houses, public and other buildings, in the ventilation of such buildings, and regulation of the temperature thereof.*" Oct. 17, 1871.

2780.—Joseph Jeffrey Bennett, of Langbourn Chambers, Fenchurch Street, civil engineer, and Nicholas Rowe, of the Asphalte Works, Whitepost Lane, Victoria Park, both in the co. of Middlesex, for "*Improvements in the construction of asphalte and bituminous roadways and footways.*" Oct. 18, 1871.

2948.—Alfred Tylor, of 2, Newgate Street, in the City of London, brassfounder, for "*Improvements in lavatories, the basins, cocks, taps, valves, and apparatus and arrangements connected therewith, parts of which improvements are applicable for other purposes for controlling and regulating the discharge of liquids and fluids, and preventing waste.*" Nov. 3, 1871.

PATENTS WHICH HAVE PASSED THE GREAT SEAL.

1641.—Edward Thomas Hughes, of the firm of Hughes and Son, of 123, Chancery Lane, London, patent agents, for "*An improved valve for stopping and regulating the supply of water, steam, gas, air, and similar purposes.*" A communication. June 22, 1871.

2714.—Louis Sterne, of 9, Victoria Chambers, in the city of Westminster, engineer, for "*Improvements in meters for water, gas, and other fluids.*" A communication. Oct. 13, 1871.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

3697.—Frederick Beech, "*Improvements in gullies or stench-traps, and in mud-boxes connected therewith.*" Dec. 4, 1868.

3714.—Alexander Melville Clark, "*A new or improved chemical compound for the disinfection and treatment of sewage and other liquid and solid matters.*" Dec. 5, 1868.

Share List of Metropolitan Gas Companies.

Number of Shares issued.	Amount per share.	Name of Company.	Amount paid up p. Share.	Dividend p. Cent. p. Annum.	Latest Quotations.
	£		£ s. d.	£ s. d.	£
8000	20	Anglo-Romano	20 0 0	10 0 0	20 — 22
5000	20	Bahia (Limited)	20 0 0	3 0 0	12¾ — 13¼
1008	20	Do., preference	20 0 0	10 0 0	23 — 25
750	20	Do., do., redeemable	20 0 0	10 0 0	21 — 23
40000	5	Bombay (Limited)	5 0 0	6 15 0	6¼ — 6⅜
10000	5	Do., third issue	4 0 0	6 15 0	1 —1¼ pm.
10000	20	British (Limited) (Norwich, Hull-Seulcoates, Hanley, Tunstall & Shelton [Potteries], Trowbridge., and Holywell.)	20 0 0	10 0 0	34 — 35
7500	20	Cagliari (Limited)	20 0 0	7 0 0	20 — 21
112000	10	*Chartered*	10 0 0	8 0 0	16¼ — 16⅜
10000	10	Do., B shares, 4 per cent. max.	10 0 0	4 0 0	7⅛ — 8
25000	10	Do., 5 per cent. preference	10 0 0	5 0 0	13⅜ — 14¼
20000	10	Do., 5 per cent. preference, second issue	8 0 0	5 0 0	3¼—3⅜pm.
20000	10	Do., 10 per cent. preference	10 0 0	10 0 0	19⅛ — 20¼
17490	25	*Commercial*	25 0 0	10 0 0	43 — 44
20000	20	Continental Union	20 0 0	8 0 0	25 — 26
10000	20	Do., new	7 10 0	8 0 0	3 —3¼ pm.
5215	20	Do., preference (Grmny.: Strsbg. France: Cette, Nismes, Montargis Vienne, Roanne, Beaucaire, Rueil, Albi. Italy: Milan, Genoa, Parma, Modena, Alessandria, Messina.)	20 0 0	7 0 0	25 — 27
5000	10	*Crystal Palace District*	10 0 0	10 0 0	17 0 0
5000	10	Do., preference	10 0 0	6 0 0	12 0 0
6624	10	Do., new shares	10 0 0	7 0 0	13 0 0
3376	10	Do.	1 0 0	7 0 0	1 10 0
23406	10	European (Limited)	10 0 0	11 0 0	16¼ — 16⅜
12000	10	Do., new shares (Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)	5 0 0	11 0 0	3¼ —3⅜pm.
5000	10	Hong Kong (Limited)	10 0 0	10 0 0	13¾ — 14¼
1360000	100	*Imperial*	100 0 0	10 0 0	171 —173
26000	12½	Do., new shares	12 10 0	7 0 0	16¼ — 16⅜
25000	12½	Do., new shares, 1870	*7 10 0	7 0 0	2⅜—3¼ pm.
1300	100	Do., bonds	£100	10 0 0	190 —195
56000	50	*Imperial Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam., Aix-la-Chapelle, Antwerp, Bordeaux, Brussels, Cologne, Frankfort-on-Maine, Haarlem, Stolberg, Toulouse, & Vienna.)	43 15 0	9 2 6	69 — 70
400	100	Imperial Mexican (Limited)	100 0 0	nil.	
200	100	Do., new	100 0 0	nil.	
3000	40	*Independent*	40 0 0	10 0 0	69 — 70
3000	10	Do.	10 0 0	5 0 0	8 — 9
3000	20	Do.	20 0 0	7 10 0	4 —5 pm.
250000	Stk.	*London*	100 0 0	10 0 0	168 —171
24000	Stk.	Do., 1st preference	100 0 0	6 0 0	120 —124
	Stk.	Do., 2nd preference	100 0 0	6 0 0	
	Stk.	Do., 3rd preference	100 0 0	6 0 0	
£18781	100	Do., 1st preference stock	100 0 0	6 0 0	121 —123
£11828	100	Do., 2nd preference stock	100 0 0	5 0 0	103 —105
		Nictheroy, Brazil (Limited)			
15000	5	Malta and Mediterranean (Limited)	5 0 0	5 0 0	3⅞ — 4¼
6000	5	Do., preference	5 0 0	7 0 0	5⅛ — 5⅜
20000	5	Mauritius (Limited)	2 0 0	6 0 0	2⅛ — 2⅜
30000	5	Oriental (Calcutta)	5 0 0	9 0 0	6⅞ — 7¼
30000	5	Do., new shares	2 10 0	9 0 0	⅞ — 1¼ pm.
10000	5	Ottoman (Limited)	5 0 0	nil.	2 — 2⅛
14000	10	Pará (Limited)	10 0 0	8 0 0	10¼ — 11⅛
27000	20	*Phœnix*	20 0 0	10 0 0	33½ — 34¼
3600	100	Do., new	45 0 0	7 10 0	17 —19 pm.
144000	Stk.	Do.	100 0 0	5 0 0	88 — 90
5000	20	*Ratelif*	20 0 0	10 0 0	33 — 35
30000	20	Rio de Janeiro (Limited)	20 0 0	10 0 0	33 — 35
6959	5	Singapore (Limited)	5 0 0	6 0 0	33 — 34
2000	5	Do., preference	5 0 0	7 10 0	
1500	32½	Shanghai	32 10 0	12 0 0	
4000	50	*South Metropolitan*	50 0 0	10 0 0	90 — 92
4000	12½	Do.	12 10 0	10 0 0	21¼ — 22½
20000	12½	Do., new shares	2 10 0	10 0 0	5 — 5⅛
15000	10	*Surrey Consumers*	10 0 0	10 0 0	16¼ — 17½
10000	10	Do., new	6 0 0	10 0 0	4¼ — 5⅛
9000	4	United General (Limerick)	4 0 0	5 0 0	2¼ — 2⅜
1500	10	*Wandsworth and Putney*	10 0 0	10 0 0	13 — 14
1500	10	Do.	10 0 0	7 10 0	7¼ — 8
1819	10	Do.	10 0 0	7 10 0	
1138	10	Do.	5 0 0	7 10 0	
20000	10	Western (Limited) A shares	10 0 0	10 0 0	17 — 18
10000	10	Do., B shares	9 0 0	10 0 0	7 —7½ pm.
10000	10	Do., C shares	9 0 0	10 0 0	7 —7½ pm.
20000	10	Do., D shares	1 0 0	10 0 0	3¼—3⅜ pm.
16000	5	*West Ham*	5 0 0	8 0 0	7¼— 7⅜
10000	5	Do., new shares	1 0 0	8 0 0	1¼— 1⅜
551	10	West London Junction (Limited)	10 0 0	6 0 0	
520	10	Do., preference	10 0 0	6 0 0	

* Call of £2 10s. per share just paid.]

Share List of Provincial Gas Companies.

(Directors and Managers of Gas-Works are earnestly requested to enable us to rectify any errors and fill up the omissions in the following List.)

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£	**ENGLAND.**	£ s d	£ s d	£ s d
1200	5	Aberdare	5 0 0	10 0 0	6 10 0
		Aberdare & Aberaman			
		Aberdovey			
400	5	Abergele (Lim.)	5 0 0	4 0 0	5 0 0
		Abertillery G. & W.			
250	2½	Abersychan (Lim.)	2 10 0		
		Aberystwith			
800	12½	Abingdon	12 10 0	8 0 0	16 0 0
1050	10	*Accrington G. & W.*	10 0 0	& Bns.	15 0 0
1050	10	Do., new shares	10 0 0		15 0 0
2100	5	Do., do.	5 0 0		7 10 0
2100	5	Do., do.	1 0 0		1 10 0
2100	2½	Do., do.	0 10 0		0 15 0
1512*l.*	5	*Airdale* (Limited)	5 0 0	10 0 0	10½—10¾
1176*l.*	5	Do.	1 0 0		
24	75	Alcester	75 0 0	4 0 0	80 0 0
128	10	Aldborough (Lim.)	10 0 0	5 0 0	
269	10	Alderney	10 0 0	5 0 0	11 0 0
2500	10	*Aldershot G. & W.*	7 0 0	7 0 0	7 10 0
	2	Aldridge (Limited)			
		Aldrington, B., & H.			
300	6	Alfreton	6 0 0	5 0 0	5 10 0
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	10 0 0	12 0 0
1600	5	Altrincham	5 0 0	6 0 0	6 0 0
		Ambleside District,			
		Amersham [£8000			
		Amlwich (Limited)			
170	10	Ampthill	10 0 0	4 0 0	9 0 0
350	10	Andover	10 0 0	6 0 0	12 10 0
		Annfield Plain (Lim.)			
358	5	Appleby	5 0 0	2 10 0	2 15 0
	5	Arlesey (Limited)			
260	10½	Arundel	10 10 0	7 10 0	
250	10	Ashbourne, Derby	10 0 0	6 0 0	13 10 0
292	5	Ashburton	5 0 0	5 0 0	
84	30	Ashby-de-la-Zouch	30 0 0	6 0 0	
		Ashford & Bedfont (L.)			
700	10	Ashford (L.), Kent	10 0 0	6 0 0	11 10 0
1600	30	*Ashton-und-Lyne*	30 0 0	10 0 0	60 0 0
		Aspatria			
590	7.5	Atherstone	5 0 0	9 0 0	8 10 0
		Attleborough			
		Axbridge (Limited)			
		Axminster			
900	12	Aylesbury	10 0 0	7 10 0	14 10 0
150	10	Aylsham (L.), Norfk.	10 0 0	5 0 0	12 10 0
				& Bns.	
3093	10	*Bacup (Rossendale Union)* ordinary	10 0 0	10 0 0	16 0 0
600	10	Do., preference	10 0 0	10 0 0	16 0 0
2597	10	Do., new issue	6 0 0	10 0 0	11 0 0
1503	10	Do., 2nd new issue	8 0 0	7 0 0	10 0 0
300	5	Bakewell	5 0 0	8 0 0	8 0 0
200	10	Baldock	10 0 0	7 10 0	
1000	10	*Banbury* (Limited)	10 0 0	8 10 0	15 15 0
500	10	Do., new shares	7 10 0	7 0 0	10 10 0
2650	10	*Bangor Gas & Water*	10 0 0	8 0 0	14 0 0
		Barking			
		Barmouth (L) £1500			
260	10	Barnard Castle	10 0 0	5 10 0	10 15 0
800	5	Barnet	5 0 0	6 0 0	5 10 0
		Barnsley		7 10 0	
109	20	Barnstaple	20 0 0	7 10 0	
109	20	Barnstaple (Lim.)	20 0 0	& Bns.	
		Barrow-in-Furness Gas & Water			
1158	2	Barton-on-Humber	2 0 0	5 0 0	2 0 0
120	25	Basingstoke	25 0 0	8 0 0	35 0 0
120	10	Do.	10 0 0	8 0 0	14 0 0
		Baslow (Derby)			
2500	16	*Bath*, A shares	16 0 0	8 0 0	38 10 0
2500	8	Do., B shares	8 0 0		united
2500	10	Do., C shares	10 0 0	7 0 0	15 0 0
5000	10	Do., D shares	4 0 0	7 0 0	6 2 0
		Battle £2000		6 0 0	
56	26½	Bawtry	26 12 6	6 0 0	25 0 0
300	5	Beaconsfield (L.)	5 0 0	4 10 0	05 0 0
	3	Beaminster (Limited)			
710	10	*Beccles Gas & Water*	10 0 0	2 10 0	
		Bedale, Yorkshire			
300	30	*Bedford*	25 0 0	4 0 0	20 0 0
390	10	Bedworth	10 0 0	5 0 0	10 0 0
300	3	Belford	3 0 0		1 10 0
400	10	Belper	10 0 0	10 0 0	20 0 0
	10	Bentham (Limited)			
		Berkhampstead			
1086	10	Berwick & Tweedmouth	10 0 0	10 0 0	18 0 0
120	20	Bewdley	16 0 0	5 0 0	16 0 0
200	10	Bicester	10 0 0	5 10 0	11 0 0
		Biddulph, Bradley G., & Black Bull			
410	10	Bideford	10 0 0	6 0 0	10 10 0
90	10	Do.	5 0 0		
		Biggleswade			
		Billericay			
200	10	Billingboro' & Hor.	10 0 0	8 10 0	12 10 0
6000	5	*Bilston*	5 0 0	8 0 0	6 6 0
200	10	Bingham	10 0 0	4 0 0	
		Birchington (Lim.)			
		Birkdale (Limited)			
1200	80	*Birmingham*, A sh.	80 0 0	9 0 0	137½—8½
400	8	Do., B shares	8 0 0	9 0 0	13¾—13¾
3750	40	Do., new shares	40 0 0	7 10 0	57¼—58
1270	40	Do.	30 0 0	7 10 0	44¼—44½
2400	50	*Birmingham & Staffordshire*	50 0 0	10 0 0	102 10 0
2400	25	Do., new shares	25 0 0	10 0 0	51 5 0
7020	20	Do., do.	20 0 0	10 0 0	41 0 0
12500	28	Do., do.	18 0 0	7 10 0	29 10 0
250	16	*Birstall*	12 0 0	12*s.* 6*d.* per sh.	12 0 0
		Bishop's Auckland			
180	10	Bishop's Castle	10 0 0	5 0 0	10 0 0
230	10	Bishop's Stortford	10 0 0	5 0 0	10 0 0
		Bishop's Waltham (L)			
6000	15	*Blackburn*, A shares	15 0 0	10 0 0	29 10 0
6000	15	Do., B shares	14 0 0	7 10 0	19 0 0
772	5	Blaenavon (L) £4000	5 0 0	7 10 0	6 0 0
		Blaenavon Gas & W.			
		Blandford			
		Blancan Festiniog (L.)			
		Blyth & Cowpen			
		Bodmin			
800	5	Bodmin Consumers	4 0 0	6 0 0	4 10 0
844	5	Bognor	5 0 0	4 11 8	
844	5	Do.	2 0 0	4 7 6	
100	10	Bolsover	10 0 0		10 0 0
3909	16½	*Bolton*	16 10 0	10 0 0	41 0 0
7466	16½	Do., new shares	16 10 0	6 10 0	28 0 0
		Boroughbridge (L)			
2000	10	*Boston*	10 0 0	8 10 0	18 0 0
1500	10	Do.	10 0 0	7 0 0	14 0 0
	5	Boston Spa (Lim.)	5 0 0	6 10 0	5 10 0
		Botesdale (L.), Suff.			
	5	Bottesford (L) £1500			
200	5	Boughton Blean	5 0 0	5 0 0	5 0 0
193	10	Bourn	10 0 0	5 0 0	
		Bournemouth G. & W.			
350	10	Box Moor, Two Waters & Crouchfield (L.)	10 0 0	5 10 0	10 10 0
160	10	Brackley	10 0 0	6 0 0	10 0 0
		Bracknell (Lim.)			
		Bradford, Wilts			
		Bradley (Limited)			
		Braintree			
	67	Bramham Consumers (Limited)			
		Brampton, Cumber.			
		Brandon, Suffolk			
600	10	*Brecon* (Limited)	10 0 0	10 0 0	20 0 0
129700	Sk.	*Brentford*	All.	7 10 0	
5000	20	Do., A shares	1 0 0		
2500	20	Do., preference	20 0 0	5 0 0	
		Brentwood			
		Bridge, near Canter.			
		Bridge-end G. & W.			
		Bridgenorth (L.)			
200	60	*Bridgwater*	60 0 0	7 10 0	90 0 0
866	10	Bridlington (L)	10 0 0	10 0 0	18 5 0
520	10	Do.	2 10 0	10 0 0	7 10 0
450	10	Bridport	10 0 0	8 10 0	13 0 0
450	10	Do., new shares	7 0 0	8 10 0	9 10 0
6000	5	*Brierly Hill*	5 0 0	4 0 0	10½—11
		Brigg			
		Brightlingsea (L.)			
3375	30	*Brighton*	20 0 0	7 0 0	17—18
675	20	Do., new shares	4 0 0	7 0 0	
5000	20	*Brighton & Hove*	20 0 0	7 0 0	24 0 0
1250	20	Do., new shares	20 0 0	7 0 0	22 0 0
2500	20	Do.	2 0 0	6 0 0	
		Brimscombe (L.)			
241250	Sk.	*Bristol United*	Stock.	10 0 0	195to196
300	5	*Briton-ferry*	5 0 0		
150	8	Brixham	8 0 0	5 0 0	
		Broadstairs			
2000	10	*Bromley*, Kent	10 0 0	10 0 0	16 0 0
3000	10	Do., new shares	5 0 0	10 0 0	8 0 0
6000	1	Bromsgrove	1 0 0	5 0 0	1 1 0
100	10	Bromyard (Lim.)	10 0 0		
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8—9
		Brymbo			
		Brynmawr			
100	25	Buckingham	25 0 0	6 0 0	26 0 0
		Buckpool (Limited)			
		Buntingford (Lim.)			
	5	Burgess Hill & St. John's (L.) £5000			
500	1	Burley-in-Wharfdle. (Limited)	1 0 0	5 0 0	1 1 0
		Burnham, Bucks			
		Burnham (L.) Essex			
		Burnham, Somers.			
1600	5	*Burslem & Tuns*	5 0 0	10 0 0	9 5 0
3000	5	Do., new shares	5 0 0	7 10 0	7 2 6
1600	5	Do., do.	5 0 0	7 0 0	6 10 0
440	2½	Burton, Westmoreland (Limited)	2 10 0		
1200	10	*Bury St. Edmund's*	10 0 0	10 0 0	19 10 0
1800	10	Do., new shares	4 0 0	7 10 0	6 10 0
		Caerleon (Lim.)	4 0 0		
500	5	Caerphilly Gas & Water (Limited)			
150	10	Caistor	10 0 0	7 0 0	12 0 0
187	5	Callington	5 0 0		5 0 0
215	10	Calne, Wilts	10 0 0	6 0 0	10 0 0
		Calverley (L.) *York.*			
		Camborne			
600	50	*Cambridge*	50 0 0	10 0 0	93—95
160	12½	Do., new shares	12 10 0	10 0 0	22 10 0
640	8½	Do., do.	4 0 0	10 0 0	6 0 0
	5	Cambridge Consumers (Limited)	1 10 0		
		Campden			
300	50	Cansfield	50 0 0	10 0 0	92 0 0
240	50	*Canterbury G. & W.*	50 0 0		
240	25	Do., new shares	25 0 0	£6	
240	12½	Do., do.	12 10 0		
240	6½	Do., do.	6 5 0		
800	25	*Cardiff*, A shares	25 0 0	10 0 0	48 0 0
1200	25	Do., B shares	25 0 0	8 0 0	36 0 0
400	25	Do.	17 10 0	8 0 0	25 0 0
		Cardigan (Limited)			
160	25	Carmarthen	25 0 0	5 0 0	30 0 0
	10	*Carmarthen* (Lim.)			
		Carnarvon			
	5	Carnforth (Limited)			
		Carshalton [£10000.			
200	6	Castlecary	6 0 0		5 0 0
200	10	Castle Donnington	10 0 0	6 0 0	12 14 0
249	5	Castleford	5 0 0	5 0 0	5 0 0
400	5	Castletown, I. of M.	5 0 0	6 10 0	7 0 0
409	5	Do.	5 0 0	5 10 0	5 10 0
	5	Caterham (Lim.)			
620	2	Cawood (Limited)	2 0 0	4 0 0	
329	5	Chard (Limited)	0 10 0		
	½	Charing (L.) £1000			
		Chase Town (Lim.)			
720	5	Chatteris	5 0 0	7 10 0	5 15 0
300	10	Cheadle	10 0 0	6 0 0	12 10 0
200	50	Chelmsford	50 0 0	8 0 0	70 0 0
200	25	Do., new shares	25 0 0	8 0 0	35 0 0
25000	Sk.	*Cheltenham*, stock	16 0 0	10 0 0	
50000	Sk.	Do., stock	8 0 0	7 10 0	
		Do., new shares		7 0 0	
500	10	*Chepstow*, A shares			
200	10	Do., B shares			
600	5	*Chertsey Consumrs*	5 0 0	7 0 0	6 10 0
600	1½	Do.	1 10 0	7 0 0	1 15 0
600	2½	Do.	2 10 0	7 0 0	3 0 0
250	10	Do.	10 0 0	7 0 0	11 15 0
230	10	Chesham	10 0 0	5 0 0	10 10 0
300001	Sk.	*Chester United*	Stock.	10 0	172—174
300001	,,	Do., preference	,,	17 0 0	129—131
535	10	Do., new shares	10 0 0	7 0 0	14 0 0
250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0
112001	Sk.	*Chesterfield G & W.*	100 0 0	10 0 0	
80001	Sk.	Do., guar. stock	100 0 0	5 0 0	106 0 0
400	50	Do., preference	50 0 0	5 0 0	52 0 0
2120	10	Do., do.	10 0 0	5 0 0	10 8 0
580	10	Do., ordinary	10 0 0	7 0 0	10 0 0
1700	10	Do., new	2 10 0	7 0 0	3 1 0
		Chesterton (L.)			
		Chichester			
		Chigwll. & Woodford Br. (L.) £10,000			
	5	Chilham Con. (L.)			
		Chippenham			
329	10	Chipping Nort. (L.)	10 0 0	5 0 0	
100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0
	5	Chipping Sodbury (L.)			
		Chowbent, Lanc.			
		Christchurch			
	5	Chudleigh (Lim.)			
200	5	Church Stretton (L.)	5 0 0		5 0 0
680	10	Cirencester	10 0 0	5 0 0	11 0 0
		Clay Cross		& Bns.	
	10	*Clayton, Allerton, & Thornton*	10 0 0		12½—13
		Cleethorpes			
550	10	*Clevedon* (L.)	10 0 0	7 0 0	11 10 0
327	1	Cobham (Limited)	1 0 0		
1139	5	Cockermouth	5 0 0	6 0 0	6 10 0
423	5	Coggeshall	5 0 0	10 0 0	
250	5	Do., preference	5 0 0	5 0 0	
900	20	*Colchester*	20 0 0	7 0 0	22½—23
		Coleford, Gloucester			
		Coleshill (L.) £2000			
160	10	Collingham (Lim.)	10 0 0	5 0 0	10 0 0
		Collumpton			
328	5	Colnbrook, Middlsex	5 0 0	5 0 0	5 0 0
150	20	Colne, Lancashire	20 0 0		36 0 0
150	10	Do., ½ shares	10 0 0		18 0 0
150	5	Do., ¼ shares	5 0 0	£10	9 0 0
150	5	Do., A shares	5 0 0		9 0 0
150	5	Do., B shares	5 0 0		9 0 0
150	5	Do., C shares	2 0 0		5 0 0
1500	10	Colney Hatch	10 0 0	5 0 0	10 10 0
500	10	Do.	10 0 0	5 0 0	10 0 0
	5	Colyton (Limited)	2 10 0		
320	5	Conway (Limited)	5 0 0		5 0 0
		Corsham			
		Corwen			
1200	10	Cottenham			
1600	25	*Coventry*	25 0 0	6 0 0	31¾—32½
800	25	Do., A shares	25 0 0	6 0 0	29¾—30½
800	25	Do., B shares	12 10 0	6 0 0	12 12 6
400	5	Cowbridge	5 0 0	6 0 0	6 0 0
500	10	Cowes	10 0 0	5 0 0	
		Cradley Heath			
190	10	Cranbrooke, £1900	10 0 0	7 10 0	
		Crawley		4 10 0	
		Crayford & Bexley			
		Crays			
420		Crediton	5 0 0	5 0 0	6 0 0
300	10	Crowkerne	10 0 0	6 0 0	10 0 0
		Crickhowell G. & W.			
		Cricklade (L.) £1000			
200	10	Croft & Hurworth	9 0 0		
1200	1	Crook (Limited)	1 0 0	10 0 0	1 5 0
		Croston (Limited)			
251	5	Crowland	5 0 0	7 0 0	
181	10	Crowle, Lincoln	10 0 0	10 0 0	
8000	5	*Croydon Commercial*	5 0 0	7 10 0	7 0 0
		Cuckfield			
	10	Darenth Vale (L.)			
250	20	*Dartford*	20 0 0	7 0 0	27 0 0
700	5	Dartmouth (Lim.)	5 0 0	7 10 0	7 0 0
125	20	Daventry	20 0 0	5 0 0	24 8 0
165	10	Dawley	10 0 0	5 0 0	10 0 0
346	5	Dawlish	5 0 0	8 0 0	7 10 0
1400	10	*Deal & Walmer*	10 0 0	7 10 0	12 10 0
1400	1¼	Do.	1 5 0	4 0 0	1 0 0
350	10	Do.	5 0 0	7 0 0	6 0 0

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	£		£ s d	£ s d	£ s d
1200	1	Deddington	1 0 0		
		Dedham (L.) £1000			
		Delph, Yorkshire			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
1850	25	*Derby*	25 0 0	10 0 0	35 0 0
		Dereham			
7000	5	*Devonport*			
3000	5	Do., preference	5 0 0	10 0 0	9 15 0
7400	5	*Dewsbury & Batley*	4 0 0	6 0 0	4 15 0
		A shares			
7400	5	Do., B shares	5 0 0	10 0 0	10 5 0
7600	5	Do., C shares	3 15 0	7 10 0	7 12 6
		Dipton (Limited)		7 10 0	6 2 6
		Disa			
400	5	Dolgelly			
400	2½	Do., new shares	5 0 0		
160	10	Donnington	2 10 0		
340	27½	Dorchester	10 0 0	5 0 0	10 0 0
120	25	*Dorking*	25 0 0	5 0 0	27 10 0
		Donnington, Lincoln	24 0 0	5 0 0	25 0 0
		Douglas, I. of Man			
192	25	*Dover*	25 0 0	8 0 0	30 0 0
21945	Sk.	Do., new shares	100 0 0	6 0 0	100 0 0
1855	10	Dowlais (Limited)	10 0 0	6 0 0	10 0 0
300	10	Downham Market	60 0 0	7 10 0	12 0 0
25	60	Downton (Limited) £2000			
	5	Driffield			
3000	5	*Drighlington & Gildersome*	5 0 0	7 10 0	7 5 0
		Droitwich			
1100	20	*Droylsden*			
900	30	*Dudley*	10 0 0	8 0 0	15 0 0
300	30	Do., pref. shares	30 0 0	9 0 0	40½—41½
800	10	Do., new shares	30 0 0	5 0 0	28½—29½
1500	13½		5 0 0	9 0 0	6¾—7¼
1500	6¾	*Dukinfield*	18 0 0	8 0 0	37 12 6
200	10	Dunmow	10 0 0	5 0 0	10 0 0
		Dunstable			
900	10	Durham			
900	10	Do., new shares	10 0 0	10 0 0	
400	10	Dursley, Gloucester	5 10 0	10 0 0	£26
			10 0 0	5 10 0	
150	5	Easingwold			
4000	10	*East Barnet Gas and Water*	5 0 0	5 0 0	
		Eastbourne	10 0 0	6 0 0	11 0 0
90	20	East Dereham	10 0 0	10 0 0	15 0 0
356	5	East Grinstead	20 0 0	5 0 0	21 0 0
		Easton (Limited)	5 0 0	6 0 0	5 0 0
1200	5	East Retford		5 0 0	
2410	5	*Eccleshill & Bolton*	5 0 0	10 0 0	7 10 0
1190	5	Do.	5 0 0		
		Eckington & Mosboro' (Limited)	1 0 0		
	10	Edenbridge (L.) £2000			
		Edgware			
		Egremont, Cumber.			
1399	10	*Elland*			
699	10	Do., preference	10 0 0	10 0 0	18 0 0
300	10	Do., preference	10 0 0	2 0 0	4 0 0
800	5	Elsecar (Limited)	10 0 0	5 0 0	10 0 0
		Eltham	5 0 0	5 0 0	5 12 0
		Ely (Limited)			
200	10	Emsworth			
400	5	*Enfield*			
		Epping (Limited)	5 0 0	5 0 0	5 0 0
300	19	Epsom & Ewell			
		Erith	19 0 0		
350	£5	*Eton*, A shares			
36	15	Do., B shares	15 0 0	10 0 0	16 10 0
700	10	Evesham (Limited)	15 0 0	7 0 0	
1000	25	*Exeter*	10 0 0	7 0 0	11—12
250	10	*Exmouth*	25 0 0	8 0 0	40—42
58	25	Eye	10 0 0	5 0 0	10 0 0
			25 0 0	5 0 0	25 0 0
170	10	Fairford [£3500	10 0 0	3 0 0	
		Fakenham (Limited)			
		Falkingham			
10765	1	Falmouth (Limited)			
6955	Sk.	*Fareham*	1 0 0	5 0 0	
256	25	Farnham	100 0 0	6 0 0	110 0 0
		Farnworth & Kears	25 0 0	7 0 0	35 0 0
		Farringdon			
140	50	Faversham			
		Fazeley (L.) £3000	50 0 0	10 0 0	66 0 0
120	10	Fenny Stratford (Limited)			
	5	Filey	10 0 0	5 0 0	11 0 0
	5	Finedon (L.) £2000	5 0 0	5 0 0	5 0 0
		Fleetwood			
3960	10	*Folkestone*			
280	5	Framlingham	10 0 0	10 0 0	17 17 0
1155	1	Frodsham (Limited)	5 0 0	5 0 0	5 10 0
480	25	*Frome*	1 0 0	7 10 0	1 1 0
		Furness Gas & W.	25 0 0	10 0 0	35 0 0
12000	Sk.	*Gainsborough*			
400	20	Do., new shares	All.	6 13 4	125 0 0
170	10	Gillingham (Limited) Dorset	10 0 0	6 13 4	12 10 0
103	25	Glastonbury	10 0 0	3 0 0	
600	10	*Glossop*	25 0 0	4 0 0	15 0 0
600	5	Do.	10 0 0	7 10 0	15 0 0
1800	10	Do., new shares	5 0 0	7 10 0	7 10 0
1000	25	*Gloucester*, A shares	9 0 0	7 10 0	13 0 0
856	25	Do., B shares	25 0 0	10 0 0	42 0 0
360	20	Godalming	15 0 0	7 10 0	28 0 0
300	5	Do., new shares	20 0 0	5 0 0	20 0 0
100	20	Do., do.	25 0 0	5 0 0	5 0 0
100	5	Do., do.	18 0 0		
	5	Golborne (L.) £5000	2 0 0		
621	5	*Gomersal*			
855	25	Gorleston & Strathdn.	5 0 0	6 0 0	6 7 6
	5	*Gosport*			
		Goudhurst (Limited)	25 0 0	8 0 0	36 4 0
		Grange & Cartmel District			
1000	20	Grantham			
1000	20	*Gravesend*	20 0 0	8 0 0	35 0 0
		Grays Thurrock	20 0 0	5 0 0	21 0 0
643	5	Gt. Berkhampstead			
1000	10	*Great Grimsby*	15 0 0	6 0 0	5 10 0
1000	6¼	Do., new shares	10 0 0	10 0 0	20 0 0
1627	10	Do., do.	6 10 0	10 0 0	13 0 0
			10 0 0	7 0 0	14 0 0

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	£		£ s d	£ s d	£ s d
700	5	Great Harwood	5 0 0	4 5 0	
280	5	Do., new shares	1 0 0		
210	10	Great Marlow	10 0 0	5 0 0	10 0 0
		Great Stanmore			
		Great Torrington			
450	5	Great Wigston	5 0 0	6 0 0	
150	1	Do., new shares	1 0 0	6 0 0	
	5	Greenhithe (Limited)			
	5	Grigley-on-the-Hill (Limited)			
1300	20	Guernsey			
352	25	*Guildford*, A shares	14 0 0		23 0 0
352	3	Do., B shares	25 0 0		
		Do., new shares	3 0 0		
25	200	Guisborough			
	44/5	Haddenham (Limited)	120 0 0	8 0 0	
		Hadleigh Cons. (L.)			
240	5	Hadlow (Limited)			
140	10	Hailsham	5 0 0		
40	50	Halesowen	10 0 0	6 0 0	10 0 0
300	5	Halesworth	50 0 0	6 0 0	
240	5	Haltwhistle (Lim.)	5 0 0	7 10 0	6 5 0
		Hampton Court	5 0 0	4 10 0	5 0 0
500	10	Hanley (Limited)	10 0 0	5 0 0	10 0 0
500	5	Harrington	4 0 0	6 0 0	
450	10	*Harrogate*	2 0 0	7 10 0	4 10 0
133333	Sk.	Do., A stock		7 10 0	186 5 0
90000	Sk.	Do., B stock		9 10 0	146 5 0
450	10	Do., new shares	2 0 0	7 10 0	4 10 0
6800	5	*Hartlepool G. & W.*	5 0 0	7 10 0	7 0 0
13200	5	Do., new shares	5 0 0	7 10 0	7 0 0
6597	5	Do., do.	5 0 0	7 0 0	6 12 6
8770	5	Do., do.	1 0 0	7 0 0	1 12 6
1000	1	Hartley Wintney	1 0 0	2 10 0	21s—23s
		Harwich			
300	5	Haslemere			
662	6	*Haslingden*			
343	6	Do., A shares	6 0 0	10 0 0	10 0 0
1650	25	*Hastings & St. Leonards*	4 0 0	10 0 0	6 0 0
1500	20	Do.	25 0 0	8 0 0	41 10 0
	1	Haswell Gas & Water (Limited)	20 0 0	7 0 0	27 0 0
180	10	Hatfield			
	5	Hatherigh (L.) £2000			
		Harlow & Sawbridgeworth			
500	5	Havant			
120	10	Haverhill	5 0 0	3 0 0	5 0 0
840	5	Hawick	10 0 0	5 0 0	10 0 0
	5	Hawkhurst (Limited)	5 0 0	10 0 0	10 0 0
244	5	Haworth			
		Hay (L.), Brecon	5 0 0		5 5 0
		Haydon Bridge			
8500	Sk.	*Hebden Bridge*	Stock	10 0 0	200 0 0
250	10	Do.	10 0 0	7 0 0	12 16 0
170	10	Heckington (Lim.)	10 0 0		10 0 0
		Heckmondwike			
120	10	Hedon (Limited)	10 0 0	3 0 0	
145	12	Helston	12 0 0	9 0 0	
250	10	Hemel Hempstead	10 0 0	4 0 0	7 0 0
500	10	Henley (Limited)	10 0 0	5 10 0	10 5 0
120	50	*Hereford*	50 0 0	10 0 0	
300	10	Herne Bay	10 0 0	6 0 0	11 0 0
1300	10	*Hertford*	8 0 0	7 10 0	12 0 0
		Hessle (L.) £1500			
270	10	Hexham	10 0 0	8 0 0	15 0 0
160	10	Higham Ferrers	10 0 0	7 0 0	12 0 0
	5	Highbridge (Lim.)			
		Highworth, Wilts.			
1480	5	High Wycombe	5 0 0	6 0 0	7 10 0
300	10	Hinckley	10 0 0	7 10 0	10 0 0
600	5	Hindley, Lancashire	3 0 0		3 0 0
200	20	Hitchin	20 0 0	8 0 0	
200	5	Do., new shares	5 0 0	8 0 0	
880	5	Hoddesden	5 0 0	7 0 0	6 0 0
	5	Hogsthorpe (L.) £1000			
		Holbeach [£2000			
	5	Hollingbourne (Lim.)			
600	20	*Holmfirth*	19 0 0	6 10 0	21 10 0
		Holt (Limited)			
1315	5	Holyhead	5 0 0	7 10 0	9 0 0
		Holywell (see Brit. Prov.)			
98	25	Honiton	25 0 0	3 12 0	20 0 0
1250	1	Honley (Limited)	1 0 0	5 0 0	1 0 0
6	500	Horncastle	£500		
	5	Hornchurch (Lim.)			
		Hornsey (Limited)			
1200	2½	Horsforth	2 10 0		
303	20	Horsham	20 0 0	10 0 0	30—32
	10	Houghton-le-Spring	10 0 0	8 10 0	27—30
		Howden			
1700	20	*Huddersfield*	20 0 0	10 0 0	37 5 0
250	20	Do., new shares	15 0 0	10 0 0	
		Hull			
		Hull-Sculeoates (see Brit. Provincial)			
210	10	Hungerford	10 0 0	5 0 0	10 0 0
1200	10	*Huntingdon*	10 0 0	8 10 0	17 10 0
		Hunstanton (Lim.)			
250	10	Hunton Bg. & Abbot's Langley (Lim.)	10 0 0		
		Hurstpierpoint			
600	10	*Huyton & Roby*	10 0 0	5 0 0	12 10 0
300	10	Do., new shares	9 0 0	5 0 0	11 10 0
2500	10	*Hyde*	10 0 0	10 0 0	18 0 0
				&£4arr	
1100	10	Do.	6 6 0	7 10 0	10 1 0
	5	Hythe (L.) £2000			
706	10	*Hythe & Sandgate*	10 0 0	5 0 0	10 0 0
		Idle & Eccleshill (see Airdale)			
		Ilford			
198	12	Ilfracombe	2 0 0	4 0 0	8—9
560	6¼	Ilkeston	6 5 0	11 4 0	8 0 0
	10	*Ilkley*	10 0 0		13—15
	10	Do.	2 0 0		3—4
		Ilminster			
250	5	Ingatestone (Limited)	5 0 0	1 10 0	
2800	10	*Ipswich*	10 0 0	10 0 0	18 0 0
1800	10	Do.	10 0 0	7 10 0	15 0 0
200	10	Do.	7 10 0		
		Ironbridge			
180	10	Irthlingborough	10 0 0	7 0 0	10 0 0
800	30	*Isle of Thanet* (Margate & Rams.)	30 0 0	10 0 0	60 0 0

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	£		£ s d	£ s d	£ s d
		Jersey, St. Helier's			
		Kegworth			
383	5	Kelvedon (Limited)			
2240	10	*Kendal United Gas & Water*	5 0 0		
380	20	Do., preference	10 0 0	10 0 0	21 0 0
200	10	Kenilworth (Limited)	10 0 0	7 10 0	33 0 0
400	5	Keswick	5 0 0	4 0 0	10 0 0
228	25	Kettering	25 0 0	6 0 0	4 0 0
		Ketton (L.) Rutland		5 0 0	30 0 0
	5	Keymer & Ditchling (Limited)		7 0 0	
		Keynsham			
500	5	Kibworth	5 0 0	6 0 0	7 0 0
		Kidderminster		5 0 0	
800	5	*Kidsgrove*	5 0 0	12 0 0	7 10 0
150	10	Kimbolton	10 0 0	7 0 0	12 0 0
140	7	Kingsbridge	7 0 0	7 10 0	11 0 0
		Kingsclare			
370	5	King's Cliffe	5 0 0	5 10 0	5 0 0
3300	10	*King's Lynn*	10 0 0	7 10 0	12—13
		Kingston-on-Thames			
		Kingswinford District (Limited)			
400	5	Kington, Hereford			
	1	Kinver, Staffordshire	5 0 0		5 0 0
		Kippax (Limited)			
		Kirby Lonsdale			
		Kirkburton			
400	5	Kirkby Stephen (L.)	5 0 0		
330	5	Kirkham, Lancash.	5 0 0	4 0 0	5 0 0
330	2½	Do., new shares	2 10 0	4 0 0	2 10 0
	5	Kirkhampton, Dalton, & Lepton (Lim.) £5000			
200	10	Kirton-in-Lindsey	10 0 0	5 0 0	10 10 0
200	5	Knighton (L.)	5 0 0		
1000	10	*Knottingley*			
1600	5	Knutsford Gas & W. (Limited)	5 0 0	6 0 0	5 10 0
	5	Lamborne (L.) £1200			
		Lampeter, Llandssl., Tregrn. & Abera.			
800000	Sk.	*Lancaster*	All.	9 0 0	190 0 0
	5	Langley Mill & Heanor (Limited)			
50	25	Langport	5 0 0	4 0 0	15 0 0
		Launceston			
		Lea Bridge (see County & General)			
1500	20	*Leamington Priors*	20 0 0	8 0 0	27—29
				& Bns.	
1500	20	Do., new shares	11 0 0	7 0 0	13 0 0
213	10	Leatherhead	10 0 0	5 0 0	10 0 0
		Ledbury			
		Leeswood (Limited)			
3900	13	*Leicester*	13 0 0	10 0 0	23 0 0
5000	10	Do., new shares	10 0 0	7 10 0	15 0 0
		Leigh £2000		7 0 0	
476½	21	Leighton Buzzard	21 0 0	8 0 0	30 0 0
500	10	Leominster	10 0 0	7 0 0	12 0 0
330	25	Lewes, A shares	25 0 0	8 0 0	31 5 0
644	5	Do., B shares	5 0 0		6 5 0
245	5	Leyburn, Yorkshire	5 0 0		6 0 0
		Leyland, Lancashire			
250	20	Lichfield	20 0 0	10 0 0	40 0 0
320	25	*Lincoln*	25 0 0	10 0 0	70 0 0
300	5	Lindfield (Limited)	5 0 0	8 0 0	5 0 0
240	5	Liskeard	5 0 0	7 10 0	8 0 0
		Littleborough			
240	5	Littlehampton	5 0 0	10 0 0	5 0 0
	5	Littleport (L.) £2000			
	Sk.	*Liverpool United*	£100	10 0 0	208 0 0
	25	Do.	5 0 0	7 0 0	5 12 6
	10	Llanberis (Limited)			
259	5	Llandovery (Limited)	1 10 0	7 0 0	
1375	10	Llandudno Gas & W. (Limited)	10 0 0	7 0 0	11 0 0
		Llanelly £3000			
		Llanfyllin (L.) £2000			
		Llangollen			
250	10	Llanrwerst (Limited)	9 15 0	5 0 0	9 15 0
	5	Llantrissant (L.) £2000			
	10	*Llynvi Valley*			
372	5	Loddon	5 0 0	3 0 0	5 0 0
		Long Buckby (Lim.)			
	5	Longaidg. (L.) £10,000			
120	10	Long Sutton (Lim.)	10 0 0	7 10 0	11—12
2000	10	*Longton*	10 0 0	6 0 0	14 0 0
1000	10	Do., new shares	2 0 0	6 0 0	2 5 0
		Longwood, near Huddersfield			
250	5	Lostwithiel	5 0 0	4 0 0	6 0 0
250	1	Do., new shares	1 0 0	5 0 0	1 10 0
1422	6	*Loughborough*	6 0 0	10 0 0	11 15 0
240	25	*Louth*	25 0 0	10 0 0	40 0 0
2500	10	*Lowestoft Gas & W.*			
611	5	Ludlow Union	5 0 0	5 0 0	5 0 0
250	5	Do., pref. shares	5 0 0	5 0 0	
640	10	*Luton*	10 0 0	7 10 0	12 0 0
				& Bns.	
640	5	Do., preferential	5 0 0	4 0 0	5 0 0
640	5	Do., new shares	5 0 0	7 10 0	6 0 0
				& Bns.	
100	20	Lutter (Lim.) £2000	20 0 0	6 5 0	25 0 0
	5	Lydd (L.) £3000			
		Lydney			
63	20	Lyme R.	20 0 0	4 0 0	20 0 0
120	25	Lymington	25 0 0	5 0 0	25 0 0
400	10	Lymm	9 0 0	7 0 0	11 0 0
300	10	Maidenhead	10 0 0	5 0 0	10 0 0
500	25	*Maidstone*, A shares	25 0 0	10 0 0	51—52
500	25	Do., B shares	25 0 0	4 0 0	23—24
	25	Do., new shares	25 0 0	7 10 0	
204	23	Maldon	23 0 0	7 0 0	39—40
260	10	Malmesbury	10 0 0	2 10 0	27 0 0
		Malpas (Limited)			5 15 0
835	10	Malton	10 0 0	8 0 0	15 10 0
793	7	Do.	7 0 0	8 0 0	10 10 0
		Malvern Link			
		Manningtree			
300	50	*Mansfield*	50 0 0	10 0 0	100 0 0
150	10	Mansfield Woodhouse	10 0 0		

No. of Shares issued.	Amount per share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		March			
		Margate (*see* Isle of Thanet)			
	10	Market Deeping (L.)			
		Market Drayton			
132	25	Market Harborough	25 0 0	7 0 0	35 0 0
		Market Weighton			
		Markyate Street (L.)			
		Marlborough			
150	10	Marsden (Limited)	10 0 0	5 0 0	10 0 0
	5	Marlook (L.) . £2000			
9394	Sk.	*Maryport Town & Harbour*	100 0 0	3 15 0	
59	10	Do.	10 0 0		
600	5	Matlock (Limited)	5 0 0	6 0 0	
508	5	Matlock Bridge, Matlock Bank, & Matlock Town (Limited)	5 0 0	6 0 0	
200	2	Measham (Limited)	1 12 6	5 0 0	
220	10	Melbourne	10 0 0	6 0 0	12 0 0
		Melksham			
934	2	Meltham	2 0 0	4 10 0	
220	20	Melton Mowbray (L.)	20 0 0		
1950	1	Menai Bridge	1 0 0		0 17 6
50	10	Mere	10 0 0		
330	35	*Merthyr Tydvil*	35 0 0	10 0 0	50 0 0
3300	Sk.	Do.	All.	5 0 0	100 0 0
120	10	Middleham	1 0 0	5 0 0	10 0 0
		Middletn-in-Teesdale.			
		Middletn & Dinsdale (L			
400	5	Midhurst (Limited)	5 0 0	2 10 0	5 0 0
	5	Midsomer Nor. (L.)			
198	5	Mildenhall	5 0 0	5 0 0	
513	10	*Milnrow* (Limited)	10 0 0	5 0 0	
300	5	Milnthorpe (L.) £1500	4 10 0	3 6 8	
184	10	Milverton (Limited)	10 0 0	5 0 0	10 0 0
2000	5	*Mirfield*	5 0 0	5 0 0	6 5 0
3033	10	*Mitcham & Wimble*	10 0 0		
3033	10	Do., new shares	3 0 0		
		Mold Green (Lim.)			
650	5	*Mold Gas & Water*	5 0 0	7 10 0	6¼—6½
700	10	Monmouth Gas & W.	10 0 0	5 0 0	10 0 0
250	5	Montgomery (Lim.)	5 0 0		
800	5	Morecambe (Limited)	5 0 0	5 0 0	6 0 0
	5	Moretonhampstead (Limited)			
150	10	Moreton-in-Marsh	9 2 6	4 0 0	9 2 6
1000	5	*Morley*, near Leeds	5 0 0	10 0 0	8 10 0
1000	2	Do.	2 0 0	10 0 0	3 8 0
220		Morpeth	19 10 0	5 0 0	40 0 0
		Mossley			
		Mottram			
	30	Nantwich (Limited)			
	2	Narberth (L.) . £2000			
		Nayland			
		Neath			
		Neath New			
185	10	Needham Market	10 0 0	4 0 0	
		Netherthng (L.) £700			
		Newark		10 0 0	
		Newburn			
250	20	Newbury	20 0 0	5 0 0	20 0 0
160000	100	*Newcastle & Gateshd.* A shares	100 0 0	10 0 0	175 0 0
40000	100	Do., B shares	100 0 0	3 10 0	61 0 0
100000	100	Do., C shares	100 0 0	7 0 0	122 0 0
		Newcastle-und.-Lyne			
250	5	Newent	5 0 0		
		Newhaven, Sussex			
600	5	Newmarket	5 0 0	4 0 0	4 0 0
366	2	Do., preference	2 0 0	6 0 0	2 0 0
		New Mill (L.) . £7000			
200	20	*New Mills & Hayfield*	20 0 0	7 10 0	
70	20	Newnham (Limited)	20 0 0	10 0 0	37 10 0
	5	Newport, Essex (L.) £2000			
		Newport, I. of Wight			
		Newport Pagnell			
360	35	*Newport*, Mon., A sh.	35 0 0	9 0 0	50 0 0
540	35	Do., B shares	35 0 0	7 10 0	42 10 0
		Newport, Salop			
250	5	New Romney (Lim.)	5 0 0	5 0 0	5 0 0
	20	Newton Abbott			
198	10	Newtown, Montgmy.	10 0 0	6 0 0	10 0 0
	5	Northallerton			
777	20	*Northampton*, A sh.	20 0 0	10 0 0	36 0 0
777	20	Do., B shares	20 0 0	4 0 0	14 0 0
777	20	Do., new shares	20 0 0	7 10 0	28 0 0
2331	5⅔	Do.	5 13 4	7 10 0	7 10 0
	1	*North Bierley*	1 0 0		1¼—1⅝
		Northfleet (*see* C. & G)			
		Northleach			
605	5	North Ormesby (L.)	5 0 0	6 0 0	
130	10½	North Walsham	10 10 0	5 0 0	10 15 0
371	15	Northwich	15 0 0	5 0 0	15 0 0
		Norwich (*see* Brit. P)			
4600	50	*Nottingham*	50 0 0	5 10 0	60 0 0
	50	Do., new shares	50 0 0	5 10 0	63 0 0
268	8	Nuneaton (Limited)	8 0 0	5 0 0	7 10 0
125	8	Do., new shares	8 0 0	5 0 0	7 10 0
		Oaken Gates, Salop			
240	5	Oakhampton (Lim.)	5 0 0		
200	10	Odiham	10 0 0	6 0 0	10 10 0
140	5	Ogley Hay & Brownhills (Limited)			
329	5	Old Goole (Lim.)	5 0 0	6 0 0	5 0 0
		Olney			
360	10	*Ormskirk*, old shares	10 0 0	8 0 0	14 0 0
1080	10	Do., new shares	4 10 0	8 0 0	6 4 6
2400	5	*Ossett & Horbury*	5 0 0	10 0 0	10 0 0
600	5	Do., new shares	2 0 0	10 0 0	5 5 0
		Oswestry			
		Otley, Yorkshire			
80	25	Oundle	25 0 0	7 0 0	25 0 0
2400	15	*Over Darwen*	15 0 0	5 0 0	19 0 0
1200	15	Do., B shares	7 10 0	5 0 0	10 0 0
1694	1	Over & Wharton (L.)	1 0 0		1 2 0
320	5	Owston Ferry (L.)	5 0 0	5 0 0	5 0 0
720	25	*Oxford*	25 0 0	10 0 0	50 0 0
240	25	Do., B shares	25 0 0	5 0 0	25 0 0
600	20	Do.	20 0 0	7 0 0	26 0 0
1827	5	Padiham	5 0 0	6 0 0	6 0 0
338	2½	Painswick	2 10 0		2 10 0
		Pangbourne (L.)			
		Pately Br., Yorkshire			
300	5	Peel, Isle of Man	5 0 0	7 0 0	6—7
		Pembroke Docks (L.)			
		Pembroke (*see* County & General)			
500	20	*Peniston*			
	5	Penkridge (Limited)			
250	20	Penrith	15 0 0	6 10 0	21 0 0
153	20	Penzance	20 0 0		15 0 0
		Pershore			
3000	10	*Peterborough*			
320	5	Petersfield	5 0 0	5 0 0	
300	10	Petworth	10 0 0	7 10 0	16 0 0
1250	2	Pewsey (Limited)	2 0 0	6 0 0	2 0 0
		Pickering			
		Pinxton (Limited)			
2500	10	*Plymouth & Stnhouse*	10 0 0	10 0 0	19 0 0
2500	10	Do., new shares	10 0 0	7 10 0	14 0 0
2500	10	Do., new shares	3 0 0	7 10 0	4 10 0
160	10	Pocklington	10 0 0		5 0 0
		Ponder's End & Enfield Highway (L)			
		Pontefract			
		Pontypridd		4 0 0	
400	10	Poole	10 0 0	10 0 0	15 0 0
344	2	Do., new shares	2 0 0	10 0 0	3 0 0
	10	Porth Cawl (Limited)			
643	5	Port Madoc (Limited)	5 0 0	5 0 0	
		Port Talbot			
500	10	Portishead	10 0 0	3 0 0	10 0 0
250	10	Do., new shares	1 0 0		
600	53	*Portsea Island*	53 0 0	8 0 0	60 0 0
600	50	Do., new shares	50 0 0	8 0 0	57 0 0
600	50	Do., new shares	49 0 0	8 0 0	56 0 0
	8k.	Do.		5 0 0	92 0 0
	5	Potter's Bar (Lim.)			
120	10	Potton, Bedfordshire	10 0 0	5 0 0	10 0 0
400	10	*Prescot*	10 0 0	5 0 0	
		Presteign			
120000	8k.	*Preston*	All.	10 0 0	210 0 0
12000	,,	Do.	All.	7 0 0	140 0 0
	5	Prittlewell (L.) £2000			
1000	10	Provincial (Hull)	8 0 0		8 0 0
600	20	*Pudsey*	20 0 0	10 0 0	35 0 0
600	6⅔	Do., new shares	6 13 4	10 0 0	11 13 4
600	20	Do.	20 0 0	7 0 0	26 0 0
600	6⅔	Do.	6 13 4	7 0 0	8 13 4
600	20	Do.	2 0 0	7 0 0	3 10 0
600	6⅔	Do.	0 13 4	7 0 0	1 3 4
93	20	Pwllheli	20 0 0	2 10 0	25 0 0
600	5	Quorndon & Mountsorrel	5 0 0	7 0 0	12 0 0
900	10	*Radcliff & Pilkington*, No. 1	10 0 0		
2100	10	Do., No. 2	6 0 0		
		Rainhill			
200	20	Ramsay, I. of Man	20 0 0	10 0 0	33 10 0
		Ramsey, Hunts			
		Ramsgate (*see* Isle of *Rastrick* . [Thanet)			
		Rawmarsh			
20000	Sk.	*Reading*	100 0 0	8 0 0	142 0 0
5000	Sk.	Do.	100 0 0	5 0 0	102 0 0
1000	10	Do.	10 0 0	7 0 0	13 0 0
500	10	Do., preference	10 0 0	5 0 0	10 10 0
1300	10	Do., new shares	10 0 0	7 0 0	11 7 0
		Redbourn (L) . £1100			
400	5	Redcar	5 0 0	4 0 0	5 0 0
1200	5	*Redhill*	5 0 0	7 0 0	6 0 0
		Redruth			
		Reigate			
1200	1	Repton (Limited)	1 0 0	5 0 0	1 1 0
2000	10	*Richmond*, Sur. (L.)	10 0 0	7 0 0	15 0 0
		Riding Mill, Broomhaugh, and Stocksfield (Limited)			
400	10	*Risca & Pontymster*	10 0 0	5 0 0	
600	5	Do.	5 0 0	4 0 0	
600	5	Rhosllanerchrugog	3 0 0	7 10 0	4 15 0
		Rhymney (Limited)			
400	5	Rickmansworth	5 0 0		5 0 0
180	10	Ringwood	10 0 0	5 0 0	10 0 0
		Ripley			
		Risborough			
	5	Robertsbridge (Lim.)			
		Robin Hood's Bay			
280	50	*Rochester & Chatham*		6 0 0	
		Rochford			
2600	5	Romford	5 0 0	6 0 0	5 5 0
220	10	Romsey	10 0 0	7 10 0	12 10 0
3093	10	Rossendale Union	10 0 0	10 0 0	17 2 6
600	10	Do., preference	10 0 0	10 0 0	17 2 6
2597	10	Do., new issue	6 0 0	10 0 0	11 12 6
1503	10	Do., second issue	10 0 0	7 0 0	12 10 0
		Rothwell			
		Rowley Regis & Blackheath . £4000			
350	10	Royston	10 0 0	5 0 0	9 10 0
500	5	Ruabon	5 0 0	1 10 0	4 0 0
150	20	Rugby	20 0 0	10 0 0	
150	5	Do., ½ shares	5 0 0	10 0 0	
150	6⅔	Do., ⅓ shares	6 13 4	10 0 0	
150	10	Do., new shares	10 0 0	10 0 0	
150	2½	Do., do.	2 10 0	10 0 0	
150	3¾	Do., do.	3 6 8	10 0 0	
430	10	Rugely	10 0 0	5 0 0	10 10 0
4800	5	*Runcorn*	5 0 0	10 0 0	9 0 0
114	31½	Ruthin	31 5 0	6 16 0	40 0 0
1500	12½	*Ryde*	12 10 0	8 0 0	15 0 0
500	5	Rye	5 0 0	6 0 0	6 0 0
		Saddleworth			
225	20	Saffron Walden	20 0 0	5 0 0	20 0 0
225	20	Do.	10 0 0		
1400	5	*St. Alban's Gas & Water* (Limited)	5 0 0	5 0 0	5 5 0
320	5	St. Asaph (Limited)	5 0 0		
		St. Austell			
		St. Bees (Limited)			
		St. Colomb			
4600	10	*St. Helen's*	10 0 0	10 0 0	18 10 0
1500	10	Do.	8 0 0		
		St. Ives, Cornwall			
		St. Mary's Cray			
320	5	Salcombe	5 0 0		
880	12½	*Salisbury*	12 10 0	10 0 0	23 5 0
160	12½	Do., preference	12 10 0	6 0 0	16 0 0
320	12½	Do., new shares	12 10 0	8 0 0	18 5 6
341	10	Sandbach	10 0 0	5 0 0	12 10 0
		Sandown (Limited)			
381	10	Sandwich	10 0 0	5 0 0	
		Sandy, Beds			
	5	Sawston (Lim.) £2000			
100	10	Saxmundham	10 0 0	5 0 0	
2000	10	*Scarborough*	10 0 0	7 0 0	13 0 0
1000	10	Do.	6 0 0	7 0 0	12 2 6
240	5	Sedburgh	5 0 0		
400	20	Selby	20 0 0	7 10 0	26 0 0
140	5	Settle (Limited)	3 10 0	5 0 0	
290	10	Sevenoaks	10 0 0	4 0 0	10 0 0
400	10	Shaftesbury (Limited)	10 0 0	6 0 0	10 0 0
565	5	Sheepshed (Limited)	5 0 0	6 0 0	6 0 0
135000	Sk.	*Sheffield Un.* A stock	100 0 0	10 0 0	199—200
199854	Sk.	Do., B stock	100 0 0	10 0 0	197—198
310	15	Do.	10 0 0	10 0 0	
533	6	Do.	4 0 0	10 0 0	
297	3	Do.	2 0 0	10 0 0	
307	1½	Do.	1 0 0	10 0 0	
10321	10	Do.	2 0 0	7 10 0	6 5 0
600	5	Shefford (Limited)	4 0 0		
		Shelton, Pot. (*see* B.P.)			
1681	10	*Sheppy*, Sheerness	10 0 0	10 0 0	15 0 0
400	10	Do., A shares	10 0 0	4 0 0	
350	10	Shepton Mallet	10 0 0	7 10 0	10 0 0
120	10	Shepton-und.-Wychwood (Limited)			
1500	5	Sherborne	5 0 0	7 10 0	8 0 0
		Shiffnal, Salop			
1000	5	*Shipley*	5 0 0	6 0 0	10—10½
	1⅔	Do.	1 13 4		3 10 0
	10	Do.	10 0 0		19½—20
	3½	Do.	3 6 8		6½—6⅔
150	10	Shipston-on-Stour	10 0 0	4 0 0	
		Shirland, Hallfield Gate, & Higham (L.)			
		Shirley & Freemantle, Hants			
240	25	*Shotley Bridge*	25 0 0	7 0 0	26½—27
240	10	Do., new shares	10 0 0	7 0 0	
1000	10	*Shrewsbury*, A sh.	10 0 0	10 0 0	20 0 0
1000	10	Do., B shares	10 0 0	5 0 0	10 0 0
1000	10	Do., new shares	10 0 0	7 10 0	15 0 0
		Sible Hedingham			
	5	Sidmouth (L.) . £4000			
7000	Sk.	*Skipton*	100 0 0	9 0 0	150 0 0
400	2½	Do., new shares	2 10 0	5 0 0	3 0 0
		Slaithwaite			
660	10	Sleaford	10 0 0	6 0 0	12 10 0
250	10	*Slough*	10 0 0		
340	5	Snaith	5 0 0		4 0 0
		Soham			
500	5	Solihull (Limited)	4 0 0		
	5	Somersham (L.) . £1500			
150	10	Somerton	10 0 0		
354	5	Southam	5 0 0		
1000	50	*Southampton*	50 0 0	10 0 0	
1000	5	S. Bank & Nor. (L.)	5 0 0	6 0 0	5 10 0
657	5	Do.	0 10 0		
		Southborough			
		Southend, Essex			
		Southgate & Colney H.			
220	10	South Molton	10 0 0	5 10 0	7 10 0
		South Petherton (L.)			
4000	10	*South Shields*	10 0 0	9 0 0	15 10 0
2000		Do.	3 10 0	7 0 0	5 0 0
248	10	Southwell (Limited)	10 0 0	5 0 0	11—11½
300	5	Southwold	5 0 0	5 0 0	5 0 0
1470	1	Spennymoor (Limited)	1 0 0		
400	5	Spilsby	5 0 0		
		Spittal, Ber-on-Tweed			
2000	6⅔	*Stafford*	6 13 4	10 0 0	11 10 0
2000	6⅔	Do., new shares	6 0 0	8 0 0	7 12 6
178	5	Staindrop	5 0 0	6 0 0	5 0 0
248	25	Staines & Egham	25 0 0	6 0 0	26—27
		Staithes . . . £1500			
		Staley Bridge		10 0 0	
225	50	*Stamford & St. Martin's*	50 0 0	9 0 0	75 0 0
	5	Staplehurst (L.) £2000			
150	10	Staveley (Limited)	10 0 0	5 0 0	11 10 0
300	5	Stevenage	5 0 0	5 0 0	5 0 0
2500	10	*Stoke, Fenton & Long.*	10 0 0	10 0 0	15 0 0
500	10	Do.	6 0 0	10 0 0	
400	5	Stone, Stafford	5 0 0	5 0 0	6 0 0
220	10	Stoney Stratford	10 0 0	4 10 0	9 0 0
		Storrington (L) £1000			
15000	Sk.	*Stourbridge*	All.	7 10 0	
200	20	Do., new shares	All.	7 10 0	
1100	1	Stow-on-the-Wold	1 0 0	5 0 0	1 0 0
150	20	*Stratford-on-Avon*	20 0 0	10 0 0	42 0 0
150	5	Do., new shares	5 0 0	10 0 0	10 10 0
300	10	Do., do.	10 0 0	7 0 0	15 0 0
375	8	Do., preference	8 0 0	5 10 0	9 10 0
750	5	*Stratford*	5 0 0	9 0 0	5 0 0
		Stroud			
261	20	Sudbury	20 0 0	6 10 0	21 10 0
		Sunbury (L.), Mid.			
90600	Sk.	*Sunderland*	100 0 0	10 0 0	180 0 0
25000	Sk.	Do., new	100 0 0	8 10 0	160 0 0
200	10	Sutton Coldfield (L.)	10 0 0		10 0 0
500	10	Sutton-in-Ashfield	10 0 0	8 0 0	15 0 0
600	5	Sutton & Hooton Gas & W. (Limited)			
		Sutton Southcoates & Drypool, Hull	20 0 0		23—24
		Sutton, Surrey			
465	5	Sutton Valence	5 0 0	5 0 0	5 0 0
600	5	Swadlincote	5 0 0	5 0 0	6 0 0
169	10	Swaffham	10 0 0	5 0 0	7 0 0
	5	Swanage (L.) . £2500			
240	25	*Swansea*	25 0 0	10 0 0	50 0 0
1930	25	Do., new shares	25 0 0	7 10 0	35 0 0
655	10	Swindon			
		Swindon New (L.)			
200	10	Swineshead (Lim.)	10 0 0	5 0 0	10 5 0
1000	5	Swinton & Mexboro'	5 0 0	7 0 0	7 0 0
180	10	Syston	10 0 0		10 0 0
276	5	Tadcaster	5 0 0	5 0 0	8 0 0
		Tamworth			
		Taporley (Limited)			
		Tattershall & Coningsby (Limited)			
2800	5	*Taunton*	5 0 0	7 0 0	6 15 3
2800	5	Do., new shares	4 10 0		5 0 0

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
800	5	Tavistock	3 3 9	15 0 0	6¼—7
200	5	Tenbury Union	5 0 0	5 0 0	5¼—6
150	10	Tenterden	10 0 0	4 0 0	8 0 0
200	10	Tetbury, Gloster	9 0 0	10 0 0	16 0 0
	5	Tewkesbury (Lim.)			
200	10	Thame	10 0 0	5 0 0	10 0 0
250	10	Thetford	10 0 0	6 0 0	10—11
600	10	*Thirsk*	10 0 0		20 0 0
150	10	Thronbury (Limited)	10 0 0	4 0 0	
80	1	Do., new shares	1 0 0	4 0 0	
356	5	Thorne	5 0 0		4 0 0
160	10	Thrapston (Limited)	10 0 0	5 0 0	10 0 0
	5	Ticehurst Cons. (Lim.)			
		Tideswell (L.) . £2000			
1885	5	*Todmorden* (Lim.)	5 0 0	7 10 0	7 10 0
1870	5	Do., B shares	3 0 0	7 10 0	4 10 0
600	2½	Topsham (Limited)	2 10 0	5 0 0	
		Torpoint (Limited)			
2180	10	*Torquay*	10 0 0	10 0 0	
2320	10	Do.	5 0 0	7 0 0	6—6½
		Torrington, Devon			
		Totnes			
		Totnes Consumers			
5000	5	*Tottenham & Edm.*	5 0 0	8 0 0	6 0 0
150	10	Towcester	10 0 0	5 0 0	10 0 0
		Town-Malling			
300	5	Towyn (L.) Merion	5 0 0		5 0 0
	4½	Trecastle (Limited)			
275	10	Tring	10 0 0	5 0 0	10 0 0
		Trowbridge (*see* B.P.)			
320	25	Truro	25 0 0	10 0 0	
320	5	Do., new	5 0 0	10 0 0	
		Tunbridge			
2000	10	*Tunbridge Wells*	10 0 0	10 0 0	19 0 0
	5	Turvey (Limited)			
100	10	Tuxford	10 0 0	5 0 0	12 0 0
		Twyford (Limited)			
345701	Stk.	*Tynemouth*	All.	0 0 0	130 0 0
		Ulverston			
		Uppingham			
240	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
	5	Upwell & Outwell (Limited) . £2500			
400	5	Usk (Limited)	5 0 0	10 0 0	8 8 0
300	10	Uttoxeter	10 0 0	5 0 0	12 10 0
		Uxbridge & Hill			
1500	20	*Ventnor*	11 0 0	7 0 0	13 10 0
160	10	Wainfleet (Limited)	10 0 0		8 0 0
1000	25	*Wakefield*	25 0 0	10 0 0	44 0 0
3660	5	Do.	5 0 0	10 0 0	8 16 0
1732	5	Do., new shares	5 0 0	7 10 0	6 15 0
400	5⅝	Walker & St. Anthony (Limited)	5 0 0		7¾—8¼
		Walker & Wall. Un.			
300	10	Wallingford	10 0 0	5 0 0	8 0 0
	10	*Waltham Abbey*			
2000	10	*Walton-on-Thames*		4 0 0	
	10	Walton-on-the-Naze Gas and Water			
200	10	Wantage	9 0 0	5 0 0	10 10 0
3500	2	Ware (Limited)	2 0 0	7 0 0	2 8 0
100	10	Wareham	10 0 0	3 10 0	8 0 0
2000	1	Warkwth & Amble	1 0 0	3 10 0	
200	25	Warminster	25 0 0	6 0 0	28 0 0
1800	20	*Warrington*	20 0 0	10 0 0	39 0 0
3600	20	Do.	4 0 0	7 0 0	5 5 0
		Warth			
		Warwick . . £15,000		6 0 0	
		Watchet & W. . £2500			
	2	Waterbeach (L.) £2000			
		Watford			
		Wedmore (Somerset)			
400	10	Weedon (Limited)	10 0 0	6 10 0	12 10 0
400	3	Do., new shares	1 10 0	6 10 0	1 17 6
111	25	Welchpool, Montgy.	25 0 0	5 0 0	25 0 0
200	25	Wellingborough	25 0 0	5 0 0	25 0 0
1200	10	Wellington, Salop	10 0 0	7 10 0	10—11
200	20	Wellington, Somer.	20 0 0	7 10 0	22 0 0
160	25	*Wells*, Somerset	25 0 0	10 0 0	
		Wem (Limited) £2000			
	5	Wendover (Lim.)			
		West Auckland & St. Helen's, Aklnd. (L.)			
160	10	Westbury	10 0 0		
		West Cowes			
225	10	Westerham (Limited)	10 0 0	5 0 0	11 0 0
209	5	*Westhoughton* (L.)	2 10 0		
		West Kent			
434	5	West Malling Gas & Water	5 0 0	3 0 0	4 10 0
200	20	*Weston-super-Mare*, A shares	20 0 0	10 0 0	35 0 0
200	20	Do., B shares	20 0 0	7 10 0	27 0 0
800	20	Do., C shares	15 0 0	7 10 0	
200	5	Wetherby	5 0 0		1 10 0
3000	10	*Weymouth Cons.*	10 0 0	5 0 0	10 0 0
		Whaley Bridge			
1800	10	*Whitby* (Limited)	10 0 0	10 0 0	20 0 0
2300	1	Whitchurch, Hants	0 10 0	5 0 0	
400	20	Whitehaven	20 0 0	7 10 0	30 0 0
400	5	Do., new shares	5 0 0		
		Whitehaven New			
		Whitstable			
		Whittington			
250	10	Whittlesea	10 0 0	5 0 0	11 0 0
300	10	Whitwick & Coalville	10 0 0		10 0 0
2400	5	*Whitworth Vale*	5 0 0	8 0 0	8 5 0
1164	5	Do., new shares	1 10 0	7 10 0	2 10 0
	5	Wickam M. (L.) £1000			
		Widnes Gas & Water			
1250	10	*Wigan*	10 0 0	10 0 0	20 0 0
1250	10	Do., preference	10 0 0	5 0 0	10 0 0
2500	10	Do., new shares	5 0 0	7 10 0	8 15 0
400	5	Wigston	5 0 0	6 0 0	5 0 0
		Wigton, Cumberland			
1020	5	*Willenhall*, A shares	5 0 0	10 0 0	9 0 0
1020	5 4s.	Do., B shares	2 14 0	5 0 0	2 14 0
510	5	Do., new C shares	5 0 0	7 10 0	7 0 0
918	5	Do., do.	0 10 0	7 10 0	
		Wilton			
	10	Wimborne Minster	10 0 0		
	10	Wincanton	10 0 0	7 0 0	
		Winchcombe . £1500			
1610	25	*Winchester Gas & W.*	25 0 0	5 0 0	25 0 0
		Windermere District			
1200	20	*Windsor* (Limited)	20 0 0	10 0 0	30 0 0
1200	8	Do., pref. shares	8 0 0	5 0 0	8 0 0
120	20	Do.	20 0 0	7 0 0	23 0 0
300	20	Do.	5 0 0	7 0 0	
141	10	Winslow	10 0 0	6 0 0	10 0 0
120	10	Winterton (Limited)	10 0 0	5 0 0	
120	5	Do., new shares	5 0 0	5 0 0	
200	10	Wirksworth	10 0 0	5 0 0	10 0 0
		Wisbeach			
		Witham			
		Withersea (Limited)			
		Witney			
400	5	Wivelliscombe (Lim.)	5 0 0	6 0 0	5 5 0
		Wivenhoe (L) . £2000			
200	10	Woburn	10 0 0	5 0 0	11 0 0
		Woking			
210	10	Wokingham	10 0 0	5 0 0	
98960	Stk.	*Wolverhampton*	100 0 0	10 0 0	200 0 0
550	10	Woodbridge (Lim.)	10 0 0	10 0 0	
660	2½	Woodstock	2 10 0	5 0 0	
		Woodhouses			
200	7	Wooler	7 0 0		
6000	Stk.	*Woolton*	Stock	10 0 0	150 0 0
2400	5	*Woolwich Consumers*	5 0 0	10 0 0	8 0 0
2400	5	Do., do.	5 0 0	7 10 0	7 0 0
4800	5	Do., do.	3 0 0	7 10 0	4 0 0
		Woolwich Equitable			
400	5	Wootton Bassett	5 0 0	5 0 0	5 0 0
2500	10	*Worcester*	10 0 0	10 0 0	21 0 0
		Workington			
600	10	*Worksop*	10 0 0	8 0 0	
600	5	Do., new shares	5 0 0	7 0 0	
650	10	*Worthing*	10 0 0	6 0 0	10—10½
		Worsboroughdale & Worsborough			
270	12	Wotton-under-Edge	12 0 0	4 0 0	40 0 0
12000	Stk.	*Wrexham*	Stock	10 0 0	130—140
1300	10	Do.	10 0 0	7 0 0	11 0 0
		Writtle			
		Wye, Kent			
		Wylam			
400	5	Wymondham	5 0 0	6 10 0	5 0 0
		Yarmouth, Isle of Wight			
800	30	*Yarmouth, Norfolk*	30 0 0	7 10 0	
800	7½	Do., ½ shares	7 10 0	7 10 0	
	5	Yatton Consumers (L)			
1675	4	*Yeadon & Guiseley*	4 0 0	5 0 0	4 8 0
1675	2	Do., new shares	0 5 0	5 0 0	0 5 6
280	30	Yeovil	30 0 0	6 0 0	30 0 0
280	10	Do.			
140	10	Do., new shares	10 0 0	6 0 0	10 0 0
		York Town			
15000	10	*York United*	5 0 0	10 0 0	11 5 0
5000	5	Do.	4 0 0	10 0 0	9 5 0
		Yoxford			
	5	Ystalyfera (L.) . £4000			
	10	*Ystrad Gas & W.*	2 0 0		
	5	Ystrad Rhondda (L.)			
		SCOTLAND.			
700	1	Aberlady			
		Abernethy			
		Aberlour (L.) . £650			
500	10	Airdrie	10 0 0	9 0 0	14 10 0
		Alloa			
		Alva, near Stirling			
		Alyth			
600	7	Annan	7 0 0	7 0 0	7 5 0
1600	1	Anstruther & Cellardyke	1 0 0	8 0 0	1 6 0
825	20	Arbroath	20 0 0	7 10 0	30 0 0
125	20	Ardrossan	20 0 0	8 0 0	20 0 0
658	1	Auchinleck	1 0 0		
381	5	Auchterarder	5 0 0	7 10 0	7 10 0
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
2932	5	Ayr	5 0 0	6 0 0	6 5 0
4250	2	Ayr & Newton Cons.	2 0 0	6 0 0	2 2 0
300	10	Banff	10 0 0	6 0 0	11 0 0
2158	1	Barrhead	1 0 0	7 10 0	1 0 0
200	5	Bathgate	5 0 0	5 0 0	5 0 0
		Beith			
976	1	Bervie	1 0 0	5 0 0	
		Biggar			
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0
		Blantyre (Limited)			
400	6	Borrowstowness	6 0 0	5 0 0	6 0 0
5300	1	Bothwell (Limited)	1 0 0	7 10 0	1 10 0
540	5	Brechin	5 0 0	11 0 0	12 2 6
		Bridge of Allan			
		Callender			
		Campbelton			
		Carluke, Lanark			
230	4	Carnoustie	4 0 0	7 10 0	4 0 0
178	5	Castle Douglas	5 0 0	5 0 0	5 0 0
2330	3	Coatbridge	3 0 0	10 0 0	5 0 0
200	5	Coldstream	5 0 0	6 0 0	5 0 0
		Collinsburgh			
1000	1	Comrie	1 14 8	4 10 0	1 14 8
		Corstorphine			
1200	1	Crail, Fife	1 0 0	5 0 0	1 0 0
2744	1	Crieff	1 0 0	10 0 0	1 15 0
600	1	Cullen	1 0 0	5 0 0	0 15 0
280	2½	Cumbernauld	2 10 0	5 0 0	2 10 0
200	5	Cumnock	5 0 0	6 0 0	6 0 0
600	5	Cupar Angus	5 0 0	7 0 0	6 10 0
250	10	Cupar Fife	10 0 0	10 0 0	18 10 0
300	10	Dalkeith	10 0 0	10 0 0	20 0 0
		Deanston			
750	2	Denny	2 0 0	6 5 0	2 5 0
		Denny Consumers			
	5	Dornoch			
500	1	Douglas	1 0 0	6 0 0	1 2 0
		Dufftown			
		Dumbarton			
13500	Stk.	Dumfries	Stock	8 15 0	
391	5	Dunbar	5 0 0	6 0 0	5 10 0
		Dunblane			
860	10	Dunfermline	10 0 0	10 0 0	
430	17½	Do., new shares	17 10 0		19 0 0
		Dunkeld			
1750	2	Dunoon	2 0 0	6 0 0	2 3 0
		Dunse			
250	5	Dysart	5 0 0	7 10 0	6 10 0
2327	1	East Wemyss	1 0 0	6 0 0	1 2 0
750	1	Ecclefechan	1 0 0		
6600	25	*Edinburgh*	25 0 0	10 0 0	32 15 0
6000	25	*Edinburgh & Leith*	23 0 0	8 0 0	37 0 0
621	12	Elgin	12 0 0	6 0 0	13 0 0
1300	1	Elie & Earlsferry	1 0 0	7 5 0	1 3 0
		Ellon			
		Errol			
		Eyemouth			
	14	Falkirk	14 0 0	7 0 0	14 0 0
		Falkirk, New			
632	2	Falkland	2 0 0	5 0 0	2 0 0
		Fetteresairn			
2000	1	Ferry Port on Craig	1 0 0	6 5 0	1 3 0
581	1	Fochabers	1 0 0	5 0 0	1 2 0
		Fort William			
2000	1	Fraserburgh	0 16 0	5 0 0	0 18 0
1800	7½	Galashiels	7 10 0	7 10 0	9 10 0
		Gatehouse, near Fleet			
900	2½	Girvan	2 10 0	6 0 0	2 10 0
		Grahamston			
190	10	Grangemouth	10 0 0	5 0 0	10 0 0
400	8½	Haddington	8 5 0	7 10 0	11 10 0
	1	Hamilton Corporation & Consumers			
	5	*Hamilton, New*	5 0 0	4 10 0	6 0 0
1480	5	Hawick	5 0 0	10 0 0	9 0 0
300	5	Helensburgh	5 0 0	7 10 0	7 10 0
2000	2	Holywood (Limited)	2 0 0	7 10 0	3 0 0
1312	1	Huntly	1 0 0	7 10 0	1 5 0
268	2	Innellan (Limited)			
250	5	Inverary	5 0 0	10 0 0	6 12 6
1500	1	Inverkeithing (L.)	1 0 0	5 0 0	1 0 0
800	1	Inverkip (Limited)	0 10 0		
1200	10	*Inverness Gas & W.*	10 0 0	7 10 0	13 0 0
2400	5	Do., new shares	5 0 0	7 10 0	6 10 0
		Inverury			
	10	Irvine	10 0 0	10 0 0	14 0 0
	2½	Do.	2 10 0	10 0 0	3 12 6
300	5	Jedburgh	5 0 0	7 10 0	7 10 0
		Johnstone, Paisley			
		Kamesburgh (Lim.)			
1300	1	Keith	1 0 0	5 0 0	0 11 0
600	5	Kelso	5 0 0	10 0 0	11 0 0
620	2	Kelsyth	2 0 0	5 0 0	2 0 0
950	1	Kennoway	1 0 0	5 0 0	1 1 0
1515	1	Kettle Freuchie, &c.	1 0 0	5 0 0	5 0 0
534	5	Kincardine	5 0 0	5 0 0	4 10 0
		Kinghorn			
		Kingskettle, Fife			
		Kinross			
1200	5	Kirkcaldy	5 0 0	10 0 0	10 10 0
320	8	Kircudbright	8 0 0	5 0 0	8 0 0
997	5	Kirkintulloch	3 0 0	6 13 4	3 7 0
		Kirkwall			
		Kirriemuir			
		Lanark			
3500	1	Lanark Consumers (L)	1 0 0	7 10 0	1 2 6
		Largo, near Leven			
280	8	Largs	8 0 0	7 10 0	8 10 0
1309	1	Lasswade	1 0 0		
177	5	Lauder	5 0 0	5 0 0	5 0 0
		Laurencekirk			
900	1	Leslie, Fife	1 0 0	7 10 0	1 5 0
618	1	Lesmahago	1 0 0	6 0 0	1 0 0
		Leuchars			
906	5	Leven	5 0 0	10 0 0	7 0 0
100	10	Linlithgow	10 0 0	10 0 0	19 0 0
		Linton			
		Lochee, near Dundee			
434	5	Lochgilphead (Lim.)	5 0 0	7 0 0	5 10 0
380	5	Lochwinnoch	5 0 0	3 10 0	4 0 0
	4 4/5	Lockerbie (Limited)	5 0 0		
		Macduff			
1200	1	Markinch, Paisley	1 0 0	8 0 0	1 5 0
		Maryhill, nr. Glasgow			
282	3	Mauchline	3 0 0	5 0 0	3 0 0
667	5	Maxwell Town & Dum-fries	5 0 0	5 0 0	3—3½
423	5	Maybole, Ayrshire	5 0 0	4 10 0	5 0 0
		Meigle (Lim.) . £700			
373	2	Melrose	2 0 0	7 10 0	2 10 0
718	2	Mid & East Calder	2 0 0		2 0 0
200	5	Moffat	5 0 0	5 0 0	
120	2½	Do., new shares	2 10 0	5 0 0	
400	20	Montrose	20 0 0	10 0 0	35 0
		Muirkirk (L.) . £1000			
1000	5	Musselburgh	5 0 0	8 0 0	9 9 0
618	1	Nairn	1 0 0	5 0 0	1 0 0
		Neilston, n. Glasgow			
300	5	Newburgh, Fife	5 0 0	8 0 0	7 0 0
300	1	Do., new shares	1 0 0	8 0 0	
1200	1	Newmilns	1 0 0	7 10 0	1 2 0
		Newport, nr. Dundee			
1300	1	Newport, Fife	1 0 0	5 0 0	1 1 0
		Newton-on-Ayre			
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0
300	5	N. Berwick, N.B.	5 0 0	5 0 0	7 10 0
		North Queensferry			
243	5	Oban	5 0 0	7 10 0	5 7 6
		Patrick Hillhead and Maryfield (Lim.)			
1000	5	Peebles	5 0 0	6 0 0	5 0 0
500	2½	Do., new shares	2 10 0	6 0 0	2 10 0
		Peterhead			
2000	1	Pettenween	1 0 0	6 0 0	1 1 0
2416	1	Pollokshaws	1 0 0	7 10 0	1 5 0
		Port Glasgow			
		Portobello			

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
	5	Portsoy	5 0 0	6 0 0	
200	5	Prestonpans	5 0 0	6 0 0	
1594	1	Renton, Dumbarton	1 0 0	7 10 0	1 1 6
		Rothes			
1500	1¼	Rutherglen	1 6 8	5 0 0	1 6 8
424	12	St. Andrew's	12 0 0	10 0 0	20 0 0
193	12	Do., new shares	12 0 0	8 6 8	16 10 0
400	5	Saltcoats	5 0 0	£10 & £5 bon.	8 19 0
936	1	Sanquhar	1 0 0	5 0 0	0 15 0
30	1	Do., preference	1 0 0	5 0 0	
507	5	Selkirk	5 0 0	10 0 0	10 0 0
	2	Slamannan (Limited)			
508	1	South Queensferry	1 0 0	5 0 0	1 0 0
800	2	Steventon	2 0 0	5 0 0	2 0 0
200	5	Stewarton	5 0 0	10 0 0	6—6¼
7450	2	Stirling	2 0 0	10 0 0	4 0 6
2500	1	Stonehaven	1 0 0	6 5 0	1 5 0
1110	1	Stonehouse	1 0 0	7 10 0	13s—15s
600	2½	Stornoway	2 10 0	8 0 0	3 10 0
		Stow (Limited)			
500	5	Stranraer	5 0 0	10 0 0	6 13 6
588	2	Strathaven	2 0 0	8 0 0	3 0 0
643	2½	Thurso	2 10 0		2 10 0
		Tillicoultry			
		Turriff			
800	1	Tranent	1 0 0	5 0 0	1 0 0
		Troon			
		Tullibody			
2651	1	Wemyss & Buckhvn.	1 0 0	6 0 0	1 0 0
		West Calder (Lim.)			
		Wick			
665	5	Wigtown	5 0 0		
		IRELAND.			
1800	1	Antrim (Limited)	1 0 0		1 0 0
		Ardee			
300	10	Armagh (Limited)	10 0 0	10 0 0	20 0 0
300	10	Do.	7 0 0	10 0 0	16 0 0
500	5	Athy (Limited)	4 9 0	6 0 0	5 0 0
		Balbriggan . . £1400			
		Ballabay			
		Ballycastle [ville (L.)			
900	7½	Ballymena & Harry-	7 10 0	5 0 0	7 12 6
184	10	Ballymoney	10 0 0	5 0 0	10 0 0
220	5	Ballynahinch (Lim.)	5 0 0	5 0 0	5 0 0
		Ballyshannon . £2000			
		Bangor, Down			
5250	20	*Belfast*	20 0 0	10 0 0	39 0 0
2450	20	Do., new shares	20 0 0	10 0 0	35—37
		Boyle (Limited)			
1047	5	Carlow	5 0 0	5 0 0	5 0 0
600	5	Carrickfergus (Lim.)	5 0 0	10 0 0	12 10 0
200	10	Carrickmacross (Lim.)	10 0 0	6 0 0	9 0 0
300	10	Carrick-on-Suir	10 0 0	6 0 0	10 0 0
228	10	Castleblaney (Lim.)	10 0 0	5 0 0	10 0 0
		Castlederg			
400	5	Cavan (Limited)	5 0 0		5 0 0
		Clones (Lim.) . £2000			
2000	5	Clonmel Consumers	5 0 0	6 0 0	5 10 0
240	5	Comber (Limited)	5 0 0	5 0 0	5 0 0
500	5	Cookstown	5 0 0	5 0 0	
		Coote Hill			
18000	5	*Cork Consumers* (L)	5 0 0	8 0 0	8 0 0
6000	5	Do., new shares	4 0 0	8 0 0	7 0 0
		Donaghadee . £2000			
608	11	Drogheda	11 0 0	7 0 0	14 10 0
420	5½	Do., new shares	5 10 0	7 0 0	7 5 0
19000	10	*Dublin Alliance*, Ash.	8 0 0	8 0 0	13—13½
10000	10	Do., B shares	5 10 0	8 0 0	7⅞—8
13500	10	Do., C No. 1 shares	10 0 0	8 0 0	15½—15⅝
12500	10	Do., C No. 2 shares	5 10 0	8 0 0	7⅞—8
440	25	Dundalk (Limited)	25 0 0	6 0 0	27 0 0
600	5	Dungannon	5 0 0	5 0 0	6 0 0
871	5	*Downpatrick*	5 0 0	4 0 0	4 0 0
249	10	Ennis (Limited)	10 0 0		11 0 0
240	25	Galway	25 0 0	10 0 0	35 0 0
		Gorey (Lim.) . £2000			
		Holywood (Limited)			
	10	Howth (L.) . . £350			
		Keady			
600	5	Kells (Lim.) Meath	5 0 0	6 0 0	5 0 0
600	10	Kilkenny (Limited)	10 0 0	9 0 0	12 10 0
		Killarney (L.) . £3000			
		Kilrush			
		Kinsale (L.) . . £2000			
210	10	Larne (Limited)	10 0 0	5 0 0	10 0 0
150	10	Letterkenny (Lim.)	10 0 0	6 0 0	11 0 0
500	10	Lisburn (Limited)	10 0 0	10 0 0	14 0 0
300	5	Lismore	5 0 0	3 0 0	
100	5	Do., preference	3 0 0	5 0 0	
1200	27½	Londonderry	27 10 0	7 5 6	38 10 0
1000	3	Longford	3 0 0	5 0 0	3 0 0
520	10	Lurgan	9 0 0	6 0 0	11 0 0
	1	Maghera (Limited)			
		Magherafelt (Lim.)			
		Mallow			
2191	1	Maryborough (Lim.)	0 5 0		0 5 0
		Midleton			
770	5	Monaghan (Limited)	5 0 0	4 10 0	5 16 0
2000	10	Navan	5 0 0	6 0 0	4 0 0
		Nenagh			
1000	5	New Ross	3 10 0	12 10 0	6 0 0
1400	5	Newry Conrs. (Lim.)	5 0 0	10 0 0	8 3 0
450	5	Newtownards	5 0 0	7 0 0	6 5 0
200	10	Newtownlimavady	10 0 0	5 0 0	10 0 0
		Omagh	5 0 0	7 10 0	6 0 0
414	5	Parsonstown (Lim.)	5 0 0		
250	20	Portadown	20 0 0	5 0 0	20 0 0
125	20	Portaferry			
700	10	Queenstown	10 0 0	6 0 0	11 0 0
		Randalstown (Lim.)			
		Rathkeale (Limited)			
		Roscommon . . £2500			
	5	Roscrea (L.) . . £2500			
		Saintfield (L.) . £1000			
600	5	Skibbereen (Lim.)	5 0 0	4 0 0	
600	10	Sligo	10 0 0	8 0 0	15 0 0
600	5	Do., new shares	5 0 0	8 0 0	7 10 0
		Tandragee (Limited)			
	5	Thurles (L.) . . £2500			
		Tuam (Lim.) . . £3000			
540	5	Tullamore	5 0 0	6 0 0	5 0 0
240	5	Tullow	5 0 0	6 0 0	5 0 0
		Warrenpoint . £3000			
1600	10	*Waterford*	10 0 0	6 0 0	12 0 0
1200	5	Wexford Consumers	5 0 0	10 0 0	8 0 0
300	10	Wicklow (Lim.)	10 0 0	6 0 0	10 0 0

Share List of Water Companies.

See "Share List of Gas Companies" for Gas and Water Companies.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		Airdrie & Coatbdge			
		Aldeburgh (Lim.)			
588	1	Alexandria, Dumbartonshire	1 0 0		0 2 6
		All Stretton (Lim.)			
200	20	Ardrossan	20 0 0	6 0 0	27 0 0
	100	Ashford (Limited)			
800	25	Ayr	25 0 0	5 0 0	25 0 0
1460	10	Banbury	10 0 0	3 10 0	9 0 0
		Basingstoke and Estrop (Lim.)			
		Belper			
9600	25	Birmingham	25 0 0	6 10 0	34 0 0
9600	17½	Do., new shares	3 0 0	6 10 0	
6000	10	Blackburn	10 0 0		
		Bognor (Lim.)			
		Boston			
		Bridge of Earn (L.) £450			
	1	Brightlingsea (L.)			
		Brighton, Hove, & Preston			
6000	25	Bristol	25 0 0	3 2 0	20—21
8000	12½	Do., preference	12 10 0	5 0 0	13 2 6
500	10	Briton Ferry	5 0 0		
		Broadstairs		4 0 0	
		Brompton & Gillingham			
		Burgess Hill & St. John's Cm. (L.)			
5000	10	Bury & Radcliffe	10 0 0	2 0 0	10 0 0
1333	15	Do., pref. shares	15 0 0	10 0 0	31 15 0
1333	18	Do., do.	6 0 0	10 0 0	14 0 0
2000	10	Do., do.	5 0 0	4 0 0	5 0 0
2000	10	Do., do.	1 0 0	4 0 0	5 0 0
	5	Calverley District	3 10 0		4—4¼
3250	Sk.	Cambridge	100 0 0	7 10 0	180 0 0
3250	3	Do.	2 15 0	7 10 0	
45000	Sk.	Cardiff	100 0 0	7 10 0	115 0 0
1500	10	Do.	8 0 0	5 15 0	9 0 0
	10	Charlemb. L. £3000			
55625	Sk.	Cheltenham	100 0 0	7 0 0	145 0 0
687½	25	Do., pref. shares	25 0 0	4 10 0	25 0 0
		Chepstow			
		Chester			
2433	2	Clay Cross	2 0 0	8 0 0	2 16 0
508	2	Do.	0 10 0		0 14 0
1200	10	Cleveland	10 0 0	5 0 0	
1800	10	Do.	2 0 0	5 0 0	
		Colchester			
175	20	Colne, Lancashire	20 0 0	5 0 0	28 0 0
	5	Consett District	4 0 0		4¼—4⅝
	2	Corwen (Limited)			
		Cottingley (Lim.)			
		Dartford			
1250	20	Darwen	20 0 0	3 0 0	15½—16½
1400	5	Deal	5 0 0	7 0 0	6 0 0
1600	25	Derby	25 0 0	10 0 0	56 0 0
3200	12½	Do.	4 0 0	7 0 0	5 5 0
		Dolgelly			
400	50	Dudley	50 0 0	1 0 0	20 0 0
250	25	Do., pref. shares	25 0 0	4 10 0	
		Dukinfield			
9500	10	Dundee	10 0 0	7 10 0	15 0 0
5100	10	Do.	10 0 0	6 10 0	13 10 0
2670	5	Dunfermline	5 0 0	2 0 0	2 10 0
	5	Durham	5 0 0		7¼—7½
		East Barnet Gas & Water			
7360	25	Edinburgh	25 0 0	5 0 0	28 0 0
7360	12½	Do., new shares	12 10 0	5 10 0	16 0 0
7218	6½	Do., do. ¼ shares	6 5 0	5 0 0	7 0 0
5581	6½	Do., do. do.	2 10 0	5 0 0	2 15 0
2000	25	Exeter	25 0 0	6 10 0	42 0 0
		Falmouth			
	2	Fenny Com. L. £600			
		Folkestone			
		Frome (Lim.)			
		Gosport			
	20	Gravsnd. & Milton	20 0 0	3 0 0	14—16
		Great Grimsby (L)			
1000	5	Greenock (Shaw's Gravitation)	50 0 0	7 0 0	68—70
		Guiseley, n. Leeds			
		Harrogate			
		Heywood			
		High Wycombe (L.)			
390	10	Horsham (Lim.)	10 0 0	2 10 0	
		Hunstanton (Lim.)			
1500	10	Kilmarnock	10 0 0	2 0 0	8 0 0
3200	25	Leicester	25 0 0	4 10 0	27 10 0
120	25	Lewes	25 0 0	6 0 0	26 0 0
		Limerick			
1080	25	Lincoln	25 0 0	8 0 0	43 10 0
2300	5	Luton	4 0 0		
		London Comps.—			
47000	10	Berlin	10 0 0	4 10 0	8—9
12000	25	Chelsea	25 0 0	5 5 0	28—29
975000	Sk.	East London	Stock.	6 0 0	126—128
10000	50	Grand Junction	50 0 0	8 0 0	78½—79
5840	25	Do., ¼ shares	25 0 0	8 0 0	39¼—39½
2160	25	Do., new ¼ sh.	10 0 0	7 10 0	
2310	100	Kent	100 0 0	6 0 0	129—131
1460	100	Lambeth	100 0 0	6 0 0	110—115
4120	50	Do., new shares	50 0 0	6 0 0	51¼—53
		New River		441 6 8 per sh.	£17,400
1560	100	New River London Bge. Annuities	100 0 0	2 10 0	55 0 0
	5	N. Mdlsx. L. £30,000			
3036	100	Sthwk. & Vauxhall	100 0 0	6 0 0	126—128
3036	25	Do., do.	25 0 0	6 0 0	31½—33½
1296	100	Do., do.	100 0 0	5 0 0	104—106
1296	100	Do. (1867)	85 0 0	4 10 0	106—108
12168	61	West Middlesex	61 0 0	5 15 0 per sh.	110 0 0
		Do., new shares	6 2 0	4 0 0	9—9½
		Liskeard			
		Maidstone			
		Maldon (Lim.)			
		Margate			
		Matlock			
650	10	Neath	10 0 0	7 10 0	14 0 0
310000	Sk.	Newcstl. & Gatshd.	All.	4 10 0	77—78
9600	6½	Do., pref. do.	5 0 0	5 0 0	5¼—5½
135	20	Nwprt., Carisbrook	20 0 0	4 10 0	26 0 0
		Newport, Mon.			
		Newry (L.) £8000			
1979	10	North Cheshire	10 0 0	10 0 0	17 0 0
42	5	Do.	5 0 0	10 0 0	8 10 0
1600	10	Do.	7 0 0	10 0 0	11 10 0
	10	North Shields	10 0 0		12—12¼
		Norwich			
4400	50	Nottingham	50 0 0	5 0 0	62 0 0
	5	Papcastle (Limited)			
		Pontypridd (Lim.)			
		Poole District (L.)			
	5	Portland (Lim.)			
8000	10	Portsmouth	10 0 0	6 0 0	
8000	5	Do.	2 10 0	6 0 0	
451	10	Queenstown (L.)	10 0 0	6 0 0	10 0 0
693	5	Ramsey, I. of Man	5 0 0	10 0 0	9 5 0
1500	10	Ramsgate	10 0 0	6 0 0	13—13½
		Rastrick			
		Rawfolds District			
		Reading			
		Rochdale			
		Rothesay (L.) £7000			
		Royston (L.) £2500			
		Saffron Walden (L.)			
900	10	St. Alban's	10 0 0	4 0 0	10 0 0
		St. Helen's			
	1	Sanquhar (Lim.)			
		Scarborough			
		Sealby (Limited)			
	100	Sheffield			71—72
	50	Do.			35—36
	25	Do.			17—18
	50	Do., preference			40—41
	12½	Do., B do.	10 0 0		⅛—¼ pm.
	8	Do., C do.	2 0 0		2 6 6
		Shrewsbury			
		Southend (Lim.)			
		Southport			
11184	10	South Staffordshire	10 0 0		11 17 0
2554	10	Do.	5 0 0		
		Spalding			
21000	5	Stffrdshire. Pottrs.	5 0 0	6 0 0	7 5 0
1800	12½	Stockton & Middlesboro'	12 10 0	6 0 0	
800	12½	Do., A shares	12 10 0	6 0 0	
1591	12½	Do., B shares	7 0 0	6 0 0	
4000	10	Do., C preference	2 0 0	5 0 0	
		Stow-on-W. £1000			
38400	5	Sndrlnd. & S. Shids.	5 0 0	9 10 0	9 12 6
		Tintwhistle			
		Tolcross, Lanark			
		Tweedm'th (L) £500			
		Wakefield			
3000	10	Warrington	10 0 0	5 10 0	12 0 0
5000	3	Do.	10 0 0	5 10 0	11 0 0
		Wellington, Salop			
		Wells (L.) Somerset			
		Weston-sup-Mare			
		Weymouth			
		Winchester G. & W.			
		Wirral, Cheshire			
20000	5	Wolverhmptn New	5 0 0	4 0 0	5 0 0
278	1	Woodford Halse (L)	1 0 0		
	1	Wyke (Limited)			
		Yeadon (Limited)			
6000	10	York New Co.	10 0 0	5 0 0	11 12 6

GAS-WORKS BELONGING TO PRIVATE INDIVIDUALS.

Those marked * by the purchase of the shares in extinct companies.

Alford. Ballina. Beaufort (Brecon). Beaumaris. Berkeley. Billericay. Bodmin. Broadbottom. Bungay.
Burntisland. Chapel-en-le-Chard. Clare, Suffolk. Crewe. Dingwall. Donnington, Salop. Ebbw Vale & Llilleshall
Eccleshill, near Leeds. Ellesmere. Enniscorthy. Farsley. Fermoy. Ferry Hill. Goole. Hadleigh.
Halstead. Harleston. Harrow-on-the-Hill. Hayle. Holt. Hunmanby. King's Langley. Leiston (Suffolk).
Milnrow, nr. Manchester. Mold Green, nr. Huddersfield. Mullingar*. Nantwich*. Nettlebed. New Ross. Oakham*.
Parsonstown. Penryn. Pontypool. Redditch. Ripon. Ross. Rhyl. St. Blazey (Cornwall). St. Ives* (Hunts).
St. Neots*. Seaham. Sittingbourne. Southall, Midlsex. Stokesley. Stowmarket. Tipperary. Tiverton*. Wem. Whitchurch (Salop).

GAS-WORKS BELONGING TO LOCAL BOARDS, MUNICIPAL CORPORATIONS, OR COMMISSIONERS,

Acting under special Acts of Parliament.

Aberavon. Aberdeen. Abergavenny. Athlone. Ballinasloe. Bethesda, Bangor. Beverley. Bingley. Birkenhead. Blackpool, & Layton with Warbk. Bollington (Ches.).
Bradford (Yrksh.) Brighouse. Broughty Ferry. Burnley. Burton-on-Trent. Bury (Lanc.). Buxton. Carlisle. Cashel. Chorley. Cleckheaton. Coleraine
Congleton. Dalton. Darlington. Devizes. Doncaster. Dundee. Enniskillen. Forfar. Glasgow. Great Malvern. Greenock. Halifax.
Haverfordwest. Heywood. Highbridge. Keighley. Kilmarnock. Knaresborough. Leeds. Leek. Limerick Corp. Wks. Lytham (Lanc.). Macclesfield. Manchester.
Maryport. Middlesborough. Middleton. Milton (Kent). Nelson, n. Burnley. Newton (Lanc.) Oldham. Oswaldthwistle. Paisley. Perth. Renfrew. Richmond (Yksh.)
Ripon. Rochdale. Rotherham. Rothesay. St. Mary Church. Salford. Southport. Sowerby Bridge. Spalding. Stockport. Stockton-on-Tees. Strabane.
Teignmouth. Tenby. Tralee. Trim (Meath). Tyldesley & Shakerley. Wallasey. Walsall. Wells (Norfolk) Widnes. Workington. Youghall.

WATER-WORKS BELONGING TO PRIVATE INDIVIDUALS.

Campbelltown. Chidwall (Lancaster). Hyde (Cheshire). Knaresborough. Stamford. Windsor & Eton.

WATER-WORKS BELONGING TO LOCAL BOARDS OF HEALTH, MUNICIPAL CORPORATIONS, OR COMMISSIONERS,

Acting under special Acts of Parliament.

Aberdeen. Abergavenny. Aberystwith. Alnwick. Ashby-de-la-Zouch. Ashton-under-Lyne. Baildon, Yorkshire. Barnsley. Bath. Belfast. Bilston. Birkenhead. Bishop's Auckland. Bolton. Bradford, Yorkshire.
Brynmaur, Brecon. Burnley. Bury St. Edmund's. Carlisle. Carmarthen. Chelmsford. Chorley Cork Coventry Croydon. Darlington. Dartmouth. Dorchester. Dover. Dublin.
Dumfries. East Stonehouse. Ely. Epsom, Surrey. Fareham, Hants. Glasgow. Gloucester. Greenock. Halifax. Hastings and St. Leonard's. Haverfordwest. Haworth, Yorkshire. Huddersfield. Hull.
Ilfracombe, Devon. Keighley. King's Lynn. Kirkcaldy. Knighton, Radnor. Lancaster. Leamington. Leeds. Leek. Leith. Liverpool. Llandilo. Llanelly. Lytham. Macclesfield.
Maidstone. Manchester. Merthyr Tydvil. Montrose. Nantwich, Cheshire. Oldham. Oxford. Paisley. Pembroke. Penrith. Penzance. Perth. Peterhead. Pontefract. Poole.
Port Glasgow. Preston. Pultneytown, Caithness. Rotherham. Rugby. Salford. Salisbury. Sheerness. Shipley. Southampton. Stirling. Stockport. Stroud. Swansea.
Teignmouth. Torquay. Tunbridge Wells. Wallasey. Warwick. Welchpool. West Cowes. Whitby. Whitehaven. Wigan. Windhill, Yorkshire. Wirksworth. Worcester.

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1 in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	206 lb.

Retail Prices are 5 to 10 per cent. higher.	London.	Glasgow.	Newcastle and Middlesboro'.	Wales.	Yorkshire, Derbyshire, and Staffordshire
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pig Iron, No. 1 (g.m.b.)	4 15 0	3 14 0	3 6 0	4 5 0	4 0 0
1¼ and 2-inch Socket-pipes	7 12 6	6 12 6	6 10 0	6 17 6	7 2 6
2½ and 3-inch ditto	6 17 6	5 17 6	5 10 0	5 17 6	6 2 6
4 and 5-inch ditto	6 12 6	5 12 6	5 7 6	5 15 0	6 0 0
6 inches and upwards ditto	6 7 6	5 7 6	5 2 6	5 10 0	5 17 6
Retorts, 1st fusion, hot blast	6 2 6	5 2 6	4 17 6	5 12 6	6 2 6
Ditto, 2nd ditto, cold ditto	7 2 6	6 2 6	5 17 6	6 12 6	7 2 6
Tank-plates, ¼ thick and above	6 12 6	5 12 6	5 7 6	6 2 6	6 12 6

GAS COALS.

Scotch Cannel, f.o.b.:—	Per Ton.	*Scotch Cannel*, f.o.b.:—	Per Ton.
Boghead—at Bo'ness, 57s. 6d.; at Leith 58s. 3d		Arniston (at Leith)	21s. 0d
Muirkirk	27 0	Wemyss (at Wemyss)	20 0
Kirkness, best (at Burntisland)	22 6	Haywood Co.'s Haywood (at Granton)	23 0
Capeldrae, 1st quality (at ditto)	23 6	Pirnie, or Methill	17 0
Ditto, 2nd ditto (at ditto)	17 6	Lothian's Cannel (at Leith)	24 6
Cowdenbeath (at ditto)	12 0	Grange ditto (at Bridgeness)	17 6
Lochgelly (at ditto)	12 0	Kinniel ditto, at Bo'ness)	17 6
Donnibristle—at Burntisland, 12s.; at Aberdour	12 6	Mylee' ditto	23 6
Auchinheath Lesmahago (at Granton)	27 0	Lochore Parrot (at Burntisland)	25 0
Duke of Hamilton's Lesmahago (at Granton)	28 6	Waverley Seam (at do.)	16 0
		Lanemark (at Glasgow)	16 0
		Elphinstone Tower (at Leith)	20 0

Newcastle—Unscreened:—	Per Ton 6s. 6d.
Haswells, Nettlesworth Primrose, and South Pelaw	
Felling, Framwell Gate, North Pelton, Redheugh Main, Walker's Primrose, West Wear, and Whitwell Primrose	7 6
Burnhope, Craghead, Charlaw, Derwent, East Castle, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, Seaham, South Moor Pelton, South Leverson, Towaley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton	7 0
Pearcth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton	7 3
Brancepeth, Dean's Primrose, Londonderry Gas, New Pelton, Pelton, South Pearcth, Stella, Urpeth, Washington Hutton, and West Leverson	7 6
Ramsay's Newcastle Cannel	17 6
Wigan Cannel (at Liverpool)	17 0

WROUGHT-IRON TUBING,

Subject to 60 per cent. Discount.

	2 in.	1¼ in.	1½ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 14 feet—per foot	1 9	1 2	0 11	0 8	0 6	0 4½
Ditto ditto, from 12 in. to 23½ in.—each	3 0	2 0	1 8	1 4	1 0	0 9
Long Screws, from 12 in. upwards	4 0	2 6	2 0	1 6	1 2	0 11
Bends and Springs	4 3	2 3	1 9	1 3	0 11	0 9
Square Elbows, equal or reducing; Round Elbows, 5 per cent. extra	3 6	2 3	1 9	1 2	0 10	0 6
Tees, wrought or cast	3 9	2 6	1 9	1 3	1 0	0 9
Crosses, ditto, equal or reducing	5 3	3 6	2 9	2 3	1 9	1 6
Iron Cocks	15 0	11 0	8 6	6 6	4 6	2 6
Ditto, with brass plug	22 0	19 6	13 0	10 6	7 6	3 6
Diminishing Sockets, Caps, Plugs, and Nipples	1 3	0 11	0 9	0 7	0 6	0 5
Plain Sockets	1 0	0 7	0 6	0 4	0 3½	0 3
Syphons, 2-quart	25 0	19 0	18 0	17 0	16 0	—

FREIGHTS.

Coastwise—Newcastle:—	Per Ton.	*Foreign*.—	Per Keel.
Chatham and Rochester	6s. 9d	Barcelona	£20 16s
Cork	8 3	Bordeaux	10 0
Dover, Folkestone, & Ramsgate 6s. 6d. to	8 9	Boulogne and Calais	8 15
Dublin	8 6	Cadiz	13 9
Exeter Quay	9 0	Cronstadt	—
Ipswich	6 9	Copenhagen	—
London (from Leith)	—	Genoa	£16 15s. to 19 0
London (Pool)	8 3	Hamburg	11 0
Lowestoft and Yarmouth	5 9	Havre de Grace	10 10
Portsmouth & Southampton	10 0	Leghorn	£18 to 20 0
Plymouth	10 6	Lisbon	11 0
Shoreham	8 0	Rotterdam	10 15
Whitstable	9 6	Stettin	—
Weymouth	8 3	Trieste	18 10
		Venice	22 0

WEEKLY METAL REPORT.

(*From* J. Berger Spence & Co.'s *Circular*.)

In the chemical trade there has been a gradual advance of prices throughout the past year. Manufacturers for the most part have been free of stocks, and are, to a considerable extent, engaged forward. Home consumption was never so large, nor were the exports more satisfactory. In the 11 months of 1871 the exports of alkali were 190,000 tons, value £1,588,376, as against 175,847 tons, value £1,356,729, in the corresponding period of 1870. The trade with the United States, Russia, Prussia, Belgium, and Holland was on an increased scale.

Latest Prices.—*Soda*, caustic, white, £15 10s.; cream, £15. Soda ash, £9 15s. Crystals, £5 15s. Bicarbonate, £14. Salt cake, £4. Nitrate, £16 5s.—*Ammonia*, sulphate, white and grey, £23.—*Iron and Copper Salts*: Green copperas, 54s.; sulphate, £32 to £35.

TURNER & ALLEN,

201, UPPER THAMES STREET,

London,

GAS & WATER ENGINEERS.

CONTRACTORS FOR THE SUPPLY OF

LAMP COLUMNS, LANTERNS, FOUNTAINS, PIPES, &c.,

TO

GAS, WATER, & RAILWAY COMPANIES, LOCAL BOARDS, SHIPPERS, &c.

Complete Pattern and Price Book, 3s. 6d. post free.

DUKE OF HAMILTON'S

LESMAHAGOW GAS COAL.

LESSEES:

LESMAHAGOW AND LONGLEE COAL COMPANY,

Office—5, DIXON STREET, GLASGOW.

Works—BLACKWOOD & SOUTHFIELD, LESMAHAGOW.

English and Foreign Agents:

JAMES MILLER, SON, & Co.,

1, GREAT ST. HELEN'S, LONDON, E.C.,

AND

75, UNION STREET, GLASGOW.

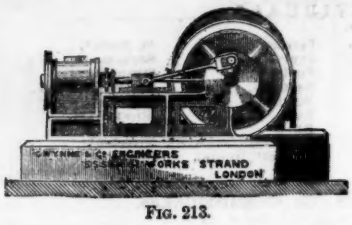

FIG. 213.

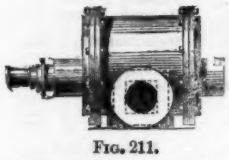

FIG. 211.

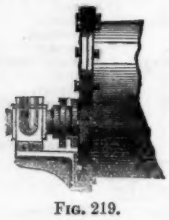

FIG. 219.

GWYNNE & COMPANY,

HYDRAULIC, MECHANICAL, & GAS ENGINEERS,

ESSEX STREET WORKS, STRAND,

London, W.C.,

SOLE MANUFACTURERS OF

BEALE'S IMPROVED PATENT GAS-EXHAUSTER,

Under the personal superintendence of Mr. BEALE.

REDUCED PRICES AND INCREASED CAPACITY.

Also manufacturers of Improved Hydraulic Regulators, to actuate a steam or gas throttle-valve to suit the make of gas; self-acting bye-pass valves, to move by hand or otherwise; improved stop-valves, with faced flanges, forming the neat adjunct to Exhauster of valve and elbow combined. Exhausters manufactured on the new principal have given the utmost satisfaction, and can be seen working at several large Gas-Works in London. G. & Co. are now engaged in manufacturing the largest Gas-Exhausters in the world, with engines complete.

The Gas-Exhausters may be made with inside or outside bearing, as shown in Figs. 211 and 219.

Fig. 213 shows the Improved Gas-Exhauster attached to, and driven by one of GWYNNE AND Co.'s well-known high-speed Horizontal Steam-Engines, without any intermediate gearing. This arrangement is extremely compact, and is beautifully adapted for small or large Gas-Works, and the foundations and erection are both very simple and inexpensive.

Prices and every information upon application to GWYNNE AND Co. *as above.*

DUKE OF HAMILTON'S

LESMAHAGOW GAS COAL.

The superior quality of this well-known Cannel, as wrought by

THE NITSHILL AND LESMAHAGOW COAL COMPANY,

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WANTED immediately, two second-hand 12-ft. PURIFIERS, with covers, connexions, and valves.

State particulars and price to Alpha, care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

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THE Advertiser, aged 22, son of a gas manager, is desirous of obtaining EMPLOYMENT in a Gas-Work. Understands meter inspecting, repairs, and fixing. Can also lay services, and has a general knowledge of the routine of a Gas-Work. Good references.

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THE Advertiser is open for an engage-ment as MANAGER. For the past six years has had the management of a work where the make is over 30 millions annually. The highest testimonials given.

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FOR SALE.—Four Purifiers, 10 ft. square, with centre-valve and connexions. Two Purifiers, 12 ft. square. A Beale's Exhauster, to pass 25,000 feet per hour, with governor and bye-pass. A Jones's Exhauster, to pass about 15,000 feet per hour. A Station-Meter, to pass 25,000 feet per hour. Mouthpieces, Hydraulic Main, and other apparatus suitable for Gas-Works.

Apply to the Tynemouth Gas Company, NORTH SHIELDS.

TO GAS MANAGERS AND OTHERS.

TO BE LET, for a term of Seven years, from the 1st of January next, the LLANTRISANT GAS-WORKS (Capital £2500). Any one understanding the business will find this a very eligible investment. A good house and garden is attached.

The Directors do not bind themselves to accept the highest or any tender.

All tenders to be addressed to the Secretary, W. JOHN, Esq., Bryntes, Llantrisant, GLAMORGANSHIRE, and must be sent in on or before Jan. 15, 1872.

Further particulars may be had on application to the Secretary.

ROCHDALE CORPORATION GAS-WORKS.

TO GASHOLDER MAKERS.

THE Gas Committee invite Tenders from parties willing to supply and fix a TELESCOPIC GASHOLDER, 126 ft. diameter by 26 ft. deep.

Further particulars may be obtained on application to the Engineer, Mr SAMUEL HUNTER, Gas-Works, Rochdale.

Tenders to be sent to my office on or before the 9th of January, 1872, endorsed "Tender for Gasholder."

The Committee do not bind themselves to accept the lowest or any tender.—By order,

ZACH. MELLOR, Town-Clerk.

Baillie Street, Rochdale, Dec. 28, 1871.

A Gas Engineer, aged 39, with 18 years practical experience in the manufacture and distribution of gas and construction of works, is desirous of obtaining a situation as Manager, or Secretary and Manager of a medium size Gas-Works. He is a good accountant and draughtsman, and, having means of his own, would be content with a very moderate salary. Undeniable testimonials, references, and security.

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GAS PLANT, NEW OR SECOND HAND.

THE Directors of the Rakes Hall Park, Gardens, and Aquarium Company, Limited, Blackpool, are prepared to receive OFFERS, with plan, for the ERECTION of GAS-WORKS capable of making from 10,000 to 18,000 feet of gas per day.

Tenders, endorsed "Gas-Works," to be addressed to the Secretary, Mr. R. RUSHTON, BLACKPOOL.

TO TAR DISTILLERS AND OTHERS.

THE Directors of the Colchester Gas Company are prepared to receive TENDERS for the purchase of the whole or portions of the GAS TAR to be produced at their works, Colchester, for the term of One or more years, as may be agreed upon, commencing on the 1st of January next. The total quantity that will be produced during the first year is estimated at 60,000 gallons.

Sealed tenders to be delivered to the Chairman of the Colchester Gas Company on or before Thursday, the 11th day of January, 1872, and endorsed, "Tender for Tar."

The Directors reserve the right to reject any tender.

By order, J. ROWAN, Manager.

Gas-Works, Colchester, Dec. 9, 1871.

GAS TAR & AMMONIACAL LIQUOR FOR SALE.

THE Haverfordwest Gas and Highway Commissioners are prepared to receive TENDERS for the surplus TAR now at their works, amounting to about 50 tons. Also for the AMMONIACAL LIQUOR that will be produced at their works in the year 1872, quantity about 20,000 gallons. The Commissioners will deliver the Tar and Liquor at the Railway Station, or at their Quay, in casks, the casks to be supplied by the purchasers.

For further information, apply to Mr. JOSEPH GIBBON, Manager, Gas-Works, HAVERFORDWEST.

Sealed tenders to be sent to the undersigned, endorsed "Tenders for Tar and Ammoniacal Liquor," on or before the 1st of February, 1872.

The Commissioners do not bind themselves to accept the highest or any other tender.

THOMAS PERKINS, Clerk to the said Commissioners.

Haverfordwest, Dec. 16, 1871.

A SAD STORY.

THE following Subscriptions have been received on behalf of the family of the late Mr. RICHARDS:—

Sums already acknowledged	£167	16	6
J. B. Paddon, Brighton	2	2	0
Geo. Livesey, London	2	2	0
— Gay, per W. Mabon & Co., Manchester	5	5	0
— Giddings, per W. Mabon & Co., Manchester	0	10	0

MANUFACTURE AND DISTRIBUTION ACCOUNTS.

Mr. W. J. WARNER

Begs to say that in consequence of the number of inquiries he has received relative to the above form of Accounts, which he had the pleasure of submitting to the

BRITISH ASSOCIATION OF GAS MANAGERS,
AT THEIR LATE MEETING IN DUBLIN,

he has been induced to publish them, and is now prepared to supply the two sheets, post free, for 5s.

Applications to be made to

Mr. W. J. WARNER,
Engineer,
GAS-WORKS, SOUTH SHIELDS.

ALFRED LASS,

ACCOUNTANT,

MERTON ROAD, NEAR HIGH STREET,

WANDSWORTH, S.W.

Mr. Alfred Lass having had considerable experience in arranging, making up, balancing and auditing gas accounts, begs to inform the Directors of Gas Companies that he may be consulted on all matters relating thereto.

Balance-sheets prepared, Accounts audited, Consultations, Agencies, &c.

ALFRED PENNY, Gas and Consulting ENGINEER,

WENLOCK IRON-WORKS,

21, WHARF ROAD, CITY ROAD, LONDON.

Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, and T-pieces, &c., &c.

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SAMUEL PONTIFEX, Consulting Gas Engineer, having retired from the Great Central Gas Company, is now prepared to furnish PLANS and SPECIFICATIONS, as well as ADVISE Provincial Gas Companies as to the erection of new, or alteration and enlargement of existing works.

Offices: 22, Coleman Street, LONDON, E.C.

TO INVENTORS AND PATENTEES.

MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.

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Extract from Report by Dr. Letheby:—

"The results have been very remarkable, for they show an average increase of 63 per cent. on the illuminating power of the gas. I am of opinion, therefore, that the invention is of great practical value."

Extract from Dr. Frankland's Course of Lectures at the Royal School of Mines, February, 1868.

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Terms on application. N.B.—A specimen sent free on receipt of Twelve stamps.

*** Further testimonials from Drs. Frankland and Crooks, showing the great practical value of this invention, will be shortly published.

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GAS ENGINEERS,
Gas-Meter, Gas Apparatus, and Gas-Fittings Manufacturers,
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2, KING EDWARD STREET,
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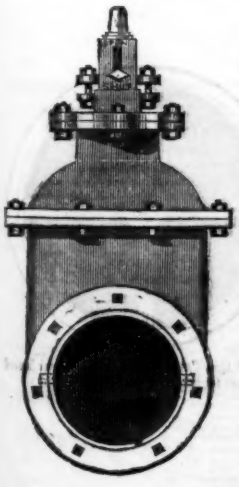
Station-Meters, Governors, Consumers Meters, Gas Lustres, Chandeliers, Brackets, &c., and every description of Gas-Fittings and Gas Apparatus.

C. & W. WALKERS'
DOUBLE-FACED GAS-VALVES.



These solidly constructed double-faced Gas-Valves are intended to supersede the old system of the light, single-faced disc, which is too uncertain and unreliable in large bores.

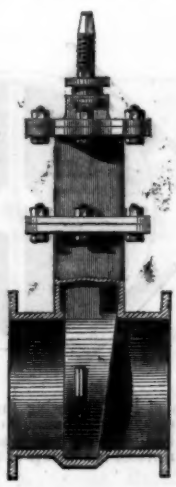
These Valves are guaranteed absolutely gas-tight. They are very massive and rigid, and by improved modes of manufacture they are produced at very little excess in cost over the old light, weak system, which is liable to spring and bend, and become leaky.

The Valve is a rigid wedge of solid cast iron, having two perfectly scraped surfaced facings fitting between the two on the body, which are also surfaced.

A spring in two short halves, and, therefore, not liable to break, is used only for scraping the front facing clean.

The front facing is vertical; the back facing forms the wedge.

At a slight additional expense both flanges are faced to bolt to main-pipes.



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" 423, " January 5, 1869.
" 461, " June 7, 1870.

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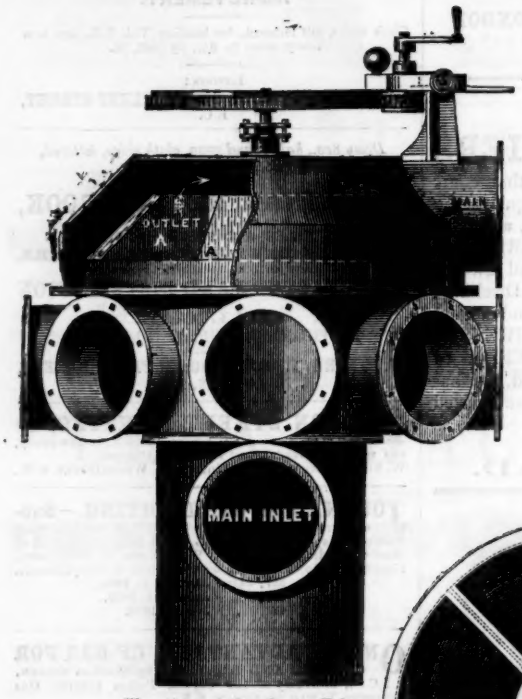
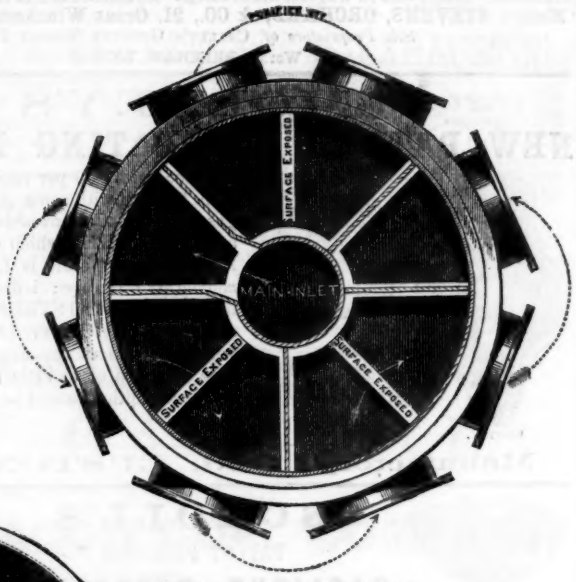
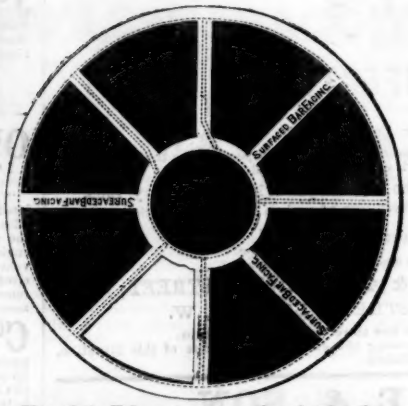


Elevation of the Centre-Valve for four Purifiers. The safety cover is shown broken, to enable the Valve itself, which is inside, to be seen.



Plan of the Body, showing the Valve lying in it, with three of the facings, which were formerly exposed to settlements of dirt, carbon, naphthaline, &c., but which are now always covered by the surfaced bar-facings of the Valve. (See below.)



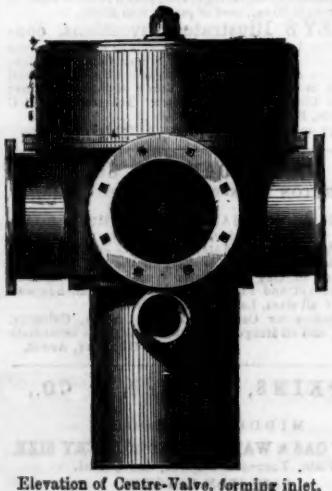
Plan of the Valve, or upper portion, showing the surfaced bar-facings referred to above.

THESE PATENT CENTRE-VALVES

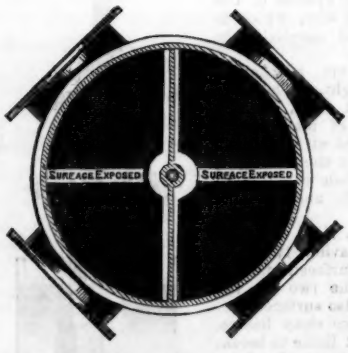
Are the most perfect and certain means for Working Purifiers.

The Valve itself is protected from all injury inside the safety cover. The working of the Valve is so easy, and so governed by the stop-catch movement, that the Purifiers can be instantaneously changed in the dark as well as in daylight. They are scraped perfectly true, metal to metal, the facings heretofore exposed are always covered, and there is nothing more reliable, certain, and durable in a gas-works. By their use the floor of the Purifying-house is clear and level; the Valve and all connexions being beneath the floor, out of the way of working. A very considerable improvement and saving is effected in the cost of the connecting-pipes.

FOUR-WAY CENTRE-VALVE, FORMING INLET, OUTLET, AND BYE-PASS.



Elevation of Centre-Valve, forming inlet, outlet, and bye-pass.



Plan of Body, showing the two facings formerly exposed to settlements of dirt, carbon, naphthaline, &c., but which are now covered by the surfaced bar-facings of the Valve.

Plan of the Valve, showing the surfaced bar-facings referred to above.

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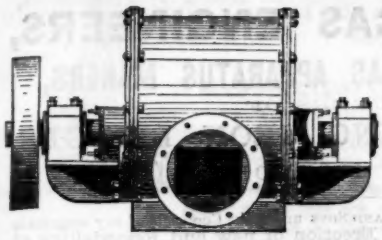

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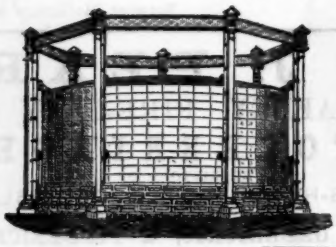

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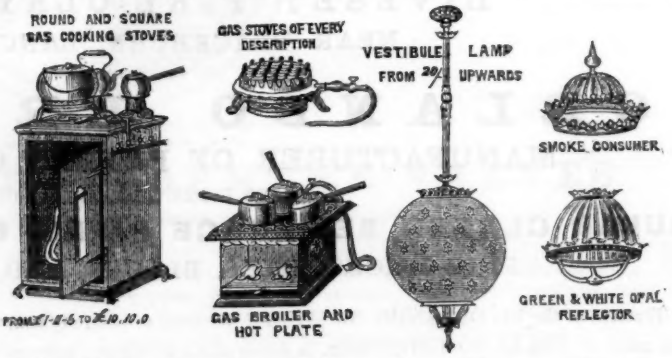
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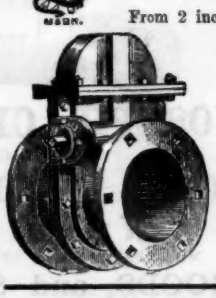

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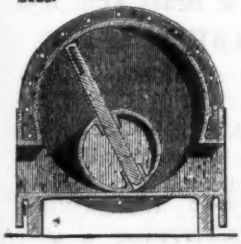

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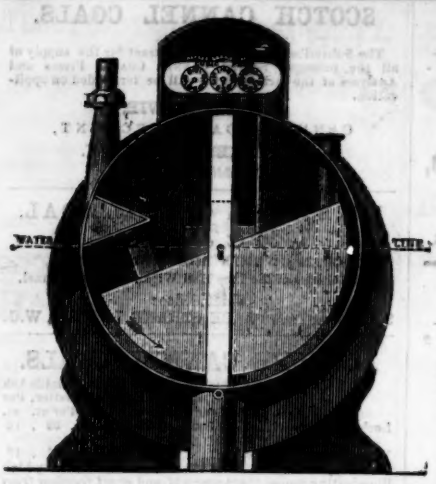

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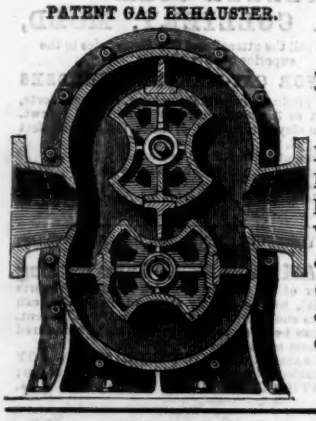

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